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ORIGINAL ARTICLES.

ANTI-TUBERCLE SERUM.

THE TREATMENT OF CONSUMPTION BY SEROTHERAPY—REPORT AND PRESENTATION OF CASES TREATED—EXHIBITION OF SERUM, ETC.

Read before the St. Louis Medical Society.

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Preliminary Remarks.—It would seem superfluous to say a word here on the pathology of this affection. But the nature of the new treatment demands that we refresh our memory on some points of it before certain therapeutic questions to be dealt with presently may appear clear. The result of my observations and researches have convinced me beyond a doubt that tuberculosis, in the stage of lesions, particularly when pulmonary cavities, intestinal ulcers, etc., exist becomes a mixed infection, due to the introduction of various other pathogenic microbes besides the bacillus of tuberculosis in the specific wound. Myriads of germs of the air, water and food gain access to tuberculous lesions and complicate the primary disease to a very grave degree. The destruction of tissue by these germs, the production of new mixed poisons, perhaps more dangerous sometimes because of chemic combinations, are largely responsible for the irregular chills, fevers and some other pathognomonic phenomena to be seen in advanced tuberculosis. These complicated microbic disturbances which so greatly depress and harass the system are, perhaps, assisted in their nefarious work by the toxins generated in a weakened impaired digestive tube which, failing to digest the food properly, leaves it the prey of various toxic-ferment manufacturing microbes. It is well to bear these points in mind when considering the anti-tubercle serum as a therapeutic agent in tuberculosis, for it probably will not improve complicated cases.

On the other hand, in tuberculosis we should never lose sight of the natural vital resistance of the exposed or suffering individual. It is this *vital resistance* of nature that saves the minority who escape all the damaging influences of the disease, and the principles underlying it explain the serum therapy. To understand this vital resistance, its nature and its scope and increase it in medical practice, is to wield a powerful weapon against the foe. The cursory method of diagnosis, therefore, merely by the interpretation of physical signs is not sufficient to put the doctor in possession of all the important facts necessary for an accurate interpretation of tuberculous phenomena and the proper treatment. The microscope should be brought into play early and often, not only to discover the existence or absence of the bacillus of tuberculosis, but also to establish the differential nature and stage of the organic lesions as far as possible and to realize the nature and extent of the mixed infection when it exists.

SEROTHERAPY IN TUBERCULOSIS.

I began the serious study of tuberculosis and experimentation in 1888, at the University of the State of Missouri at Columbia. During my service at that institution I had unsurpassed opportunities for studies in comparative pathology and experimentation. Early in my researches on tuberculosis, I became convinced that the equine species is, to a certain degree at least, naturally immune to the disease, the ass being less susceptible, possibly, than the horse, although I am by no means convinced of this. Later, following step by step the work of Metschnikoff on the theory of phagocytosis, Kitasato and others on the antiseptic properties of blood serum, I formed the conclusion that the chief and direct basis of immunity was lodged in the blood. When the Japanese scientist just mentioned and others, published that properly immunized blood serum was efficacious in the treatment of tetanus, revealing by this momentous discovery the great secret of nature's force in resisting this disease, the light began to dawn in my mind, as in that of every medical man doubtless, to the effect that the prevention and cure of contagions by the use of nature's own remedy was only a question of time. Not many years after, came the welcome announcement that diphtheria was curable by the use of a specially immunized blood serum. The press also reports that investigators in Switzerland and France are testing the blood serum of the ass. Now, I beg to report that by the same principle which underlies the antitoxic serum of Kitasato for tetanus, of Behring and Roux for diphtheria, horse blood serum may be rendered more antagonistic to tuberculosis than it is naturally. This I have accomplished, in laboratory experiments and the result obtained in treating consumptives in the first and second stages, and some in the third stage, indicates quite pointedly that serotherapy will perhaps master this dreadful plague. Indeed, I dared not hope for such universal improvements as were obtained. While in advanced consumption with cavities or other serious lesions impairing important organs gravely, I have not yet arrived at a point where I may formulate reliable deductions, a large per cent. of such cases very seriously involved, increased in six to eight weeks from five to sixteen pounds in weight without any tonic, and without any specially reconstructive diet, only the regular city hospital or poor house fare being admitted, certainly not over nutritious, whereas every witness case in the same ward, suffering with the disease in practically the same stages, untreated by blood serum continued to decline steadily or failed of improvement. Furthermore, the treated

NOTE.—The scientific experiments carried on then and since, both in the laboratory and the field, will form the subject of a special paper. This will contain explanations and results as per records kept.

cases soon began to sleep better, to cough less, expectorate less, eat with relish and their night sweats diminished. In a couple of instances in the first and second stage, cough and expectoration ceased entirely in less than eight weeks, while all the general signs of good health reappeared. There is scarcely enough expectoration in these to make microscopic analyses, and the germs are no longer to be found. I have also several cases with large cavities which have improved remarkably. I have brought here to show you, some of the worst which we have under treatment, that you may judge for yourself of the nature of the affection and its lesions. These bad cases with marked alterations of the lung tissue have gained in weight, a number of pounds in eight weeks and have improved in every way. Two of these were stretcher patients when brought to the city hospital. Both had been condemned as hopeless by several physicians. One of these weighs now more than he ever did at his best, when he was perfectly sound and healthy. We have not had any case of any kind under treatment longer than eight weeks, and obviously it is too early for me to express unqualified conclusions, particularly on the serious conditions which to be cured, demand that nature shall build new tissues to fill the gaps. But that serotherapy will prove eventually efficacious to arrest consumption, I feel almost assured.

None of the improvements can be ascribed to mental influences, as it was in nearly every case against the will of the patients that we injected them. For four weeks or more they fought and objected, and only after realizing themselves the benefits did they submit gracefully.

These results surely point to good grounds to hope for more success. Indeed, if in such a short time under such circumstances and in such surroundings one can put flesh and fat on a consumptive, while untreated witness cases under the same conditions continually fail, or at best hold their own, what may we not hope if consumptives in the first and second stages, at least, are placed in a modern sanitarium, or kept in their homes even and surrounded by all the cares and necessities for the rich reconstructive diet that should be granted such unfortunates? What may we not expect if we give them, furthermore, all the sanitary conditions that may aid nature to cure or arrest tuberculosis in any event?

RECORD OF CASES.[2]

Mike Morley, age 53, pulmonary tuberculosis in the second stage, has been ill seven years; family with history of tuberculosis. Left lung affected below the scapula at the back; dullness of the apex. Circumference of the chest in expiration 36, inspiration 37.5 inches. Coughed seriously and considerably. Expectoration was yellowish, blood tinged, sometimes pure blood. Bacilli of tuberculosis numerous. Began treatment Dec. 1, 1894. Weight 165 pounds. Lung vital capacity, 110 cubic inches of air. January 26, weight 170 pounds, an increase of 5 pounds in fifty-seven days. Lung vital capacity 110 cubic inches of air.

Charles Reck, age 48, began treatment Nov. 30, 1894; discharged January 3. Was brought to City Hospital on a stretcher; could barely rise on his chair to eat. During thirty-six days' treatment gained nineteen pounds. This man had tuberculosis of the lungs in the third stage;[3] duration two years. Bacilli of tuberculosis profuse; cavity in the left infra-clavicular space; expectorated a considerable amount of blood and sputum.

Phil Hye, age 35, pulmonary tuberculosis, second stage. Coughed six years; was very emaciated; had dullness and softening in one or both apices. Chest during expiration thirty inches; inspiration thirty-one. Tubercule germs present in abundance. Coughed constantly night and day; muco-purulent expectoration. Began treatment December 1; weight eighty-one pounds; was sleepless. January 26, weight eighty-nine pounds, a gain of eight pounds in less than eight weeks. Cough disappeared almost entirely; sleeps well. This patient was very weak on entering the City Hospital. He had been sent here from Texas, having been given up as hopeless, he said, by Dr. Jestus, city physician of El Paso, Texas, and Dr. Menger, of San Antonio, Texas. He was sent home to die, being considered hopeless. He stated that he had also been condemned as hopeless by a physician of Alexian Brothers Hospital of Chicago, where he had been under Koch's treatment. This patient is now around and about. He walked several blocks from the street cars to come to the meeting of the medical association, in the raw evening atmosphere and in muddy snow. He coughs little or none.

George Dobson, age 28 years, seriously ill two months previous to treatment; pulmonary tuberculosis in the second stage; had had hemorrhages occasionally; had dullness in right apex in infra-clavicular region; expectoration scant. Began treatment December 1; weight at that time 107 pounds; weight January 26, 117.5 pounds, a gain of 10.5 pounds in eight weeks. Vital capacity at the beginning of treatment, 100 cubic inches; vital capacity January 26, 150 cubic inches, a gain of 50 cubic inches.

John Smith, age 23, pulmonary tuberculosis, third stage; duration two years; mother had died of consumption. Lost thirty pounds in two years; affection below the left apex; large cavity; coughed particularly in the morning. Weight December 1, 145 pounds; vital capacity 170 cubic inches. Weight January 26, 154 pounds, a gain of 9 pounds in eight weeks. Vital capacity 180 cubic inches, a gain of 10 cubic inches.

Otto Maye, age 58, pulmonary tuberculosis. Had been suffering for several years. Appetite very poor; coughed considerably; had had slight hemorrhages several times in the morning. Bacilli of tuberculosis present. Weight at the beginning of treatment December 1, 135 pounds; lost flesh gradually until he reached 131 pounds on January 1. Is now gaining and has gained two and one-half pounds between January 1 and January 26. Vital capacity at the beginning of treatment 110 cubic inches, January 26, 160 cubic inches, a gain of 50 cubic inches. This patient is one of those that had an abscess during the process of treatment. He is now gaining.

Nicholas Robinson, age 61; pulmonary consumption in second stage; duration two and a half years. His mother died of consumption. Had had several hemorrhages; night sweats; coughed seriously at nights; expectoration considerable; specific germs present. Affection is in the infra- and supra-clavicular regions, both sides; dullness was quite marked; softening on one side. Weight at the beginning of treatment 119 pounds; weight January 26, 131 pounds. Has gained twelve pounds in about or less than two months. Vital capacity 150 cubic inches, December 1. Vital capacity January 26, 180 inches, a gain of 30 cubic inches. This patient was very weak; could not speak when he was brought to the hospital. He was given up as hopeless. Mild laryngeal tuberculosis existed. Was sleepless. Now sleeps well; coughs very little, has a good appetite and feels stronger.

John Cummings, age 49 years. Weight 90 pounds December 1; weight January 26, 106 pounds, a gain of 16 pounds in two months. Vital capacity December 1, 100. Vital capacity January 26, 110, a gain of 10 inches. This man had had frequent hemorrhages during last summer, and before that, and was almost bed fast. He was very emaciated. The bones almost protruded as a nurse expressed it. The bacilli numerous. The nurse was afraid of bed sores. Appetite was lost, coughed and expectorated a great deal; in fact, the case was despaired of. Is now improving continually, is up and about and able to go up and down stairs and feels in every way in better health; weighs one pound more than in his best health.

John Broderick, age 24; pulmonary tuberculosis in the third stage, duration over one year. Brother died of quick consumption; was very weak, emaciated, had a cavity in left infra-clavicular region, coughed continuously for two months previous to treatment. Weight December 1, 105.5 pounds. Weight January 26, 113 pounds, a gain of 7.5 pounds. Vital capacity 100 cubic inches before treatment. Vital capacity since, varied between 110 and 130 up to Jan. 26, 1895. This is one of the two cases that had an abscess in the back. He was almost bed fast when treatment began. Coughed a great deal night and day. Was very weak;

[2] While preparations for treatment began the last days of November, regular injections began on or the day before December 1.

[3] Diagnosis of city physicians.

breathing was very short and labored. Now coughs very little. No more pains or distress. Is up and about and on detail duty.

Henry Riley, age 34. Weight beginning of treatment 115 pounds. Weight January 26, 124 pounds, a gain of 9 pounds in two months. Had pulmonary consumption iu the second stage; duration one and one-half years. Tuberculosis in the family. Had night sweats, diarrhea, marked dullness in the right supra- and infra-clavicular region; appetite poor; coughed frequently at night; expectoration considerable. He was a very sick man, indeed, but is now improving rapidly, and is in fact on detail duty.

James McCafferty, age 48, pulmonary consumption, second stage; duration of cough several years; serious illness in last five weeks; spit blood five weeks previous to treatment; frequent diarrhea; dullness left supra- and infra-clavicular region. Weight at beginning of treatment Dec. 1, 106.5 pounds. Weight January 26, 129.5 pounds, a gain of 13.5 pounds in eight weeks. Vital capacity at the beginning 130 cubic inches of air. Vital capacity January 25, 160 cubic inches, a gain of 30 inches. Was a very sick man, unable to do anything. Is now on night duty at City Hospital, works from 11 P.M. to 6 A.M., a very trying duty for a tuberculous patient.

Thos. Morrison, age 42; pulmonary tuberculosis, second stage, duration over three years; had hemorrhages in 1891. Cavity in left apex. Pronounced dullness in right infra-clavicular region; tubular breathing over same region; appetite poor; cough and expectoration pronounced. Has been in the City Hospital for a couple of years. Weight at beginning of treatment, December 1, 156 pounds. Weight January 26, 158 pounds, a gain of 2 pounds. Vital capacity at the beginning of treatment 160 cubic inches. Vital capacity January 26, 170 cubic inches, a gain of 10 inches. This case does not improve as rapidly as others in worse condition.

John Hopkins, age 48; pulmonary tuberculosis advanced first stage, two years' duration. Mother died of consumption. Digestion bad; cough was getting continually worse; had lost much flesh. Weight Dec. 1, at beginning of treatment, 137.5 pounds. Weight January 26, 144 pounds, a gain of 6.5 pounds in about eight weeks. Vital capacity at the beginning of treatment 250 cubic inches. Vital capacity increased between then and now (January 26) to 260 and even 270 inches.

Conrad Hogan, age 32, pulmonary tuberculosis in second stage; family history good; had slight hemorrhages, night sweats; getting weaker daily; right apex involved and dull; coughed considerably. Weight at the beginning of treatment December 1, 135 pounds; weight January 26, 142 pounds, a gain of 7 pounds in those eight weeks. Vital capacity at the beginning of treatment December 1, 180 cubic inches. Vital capacity January 26, 200 cubic inches, an increase of 20 inches.

Henry Willer, age 46; pulmonary consumption, third stage; no family history of consumption; both apices involved; had had hemorrhages; had been ill five years. His disease had begun with pneumonia. Vital capacity at beginning of treatment 140 cubic inches. Vital capacity to-day is the same. Weight December, 133 pounds. Weight January 26, 132.5 pounds, loss of a half pound. This patient has not increased in weight but has declined less than previously and is stronger and better generally. Temperature is normal and he expresses himself as gaining. It is not a favorable case.

Nils Johnson, age 34; pulmonary tuberculosis third stage. Duration twenty months; dullness on percussion of the apices; tubular breathing; hemorrhage a year ago; expectoration not very pronounced. Weight December 1, at beginning of treatment was not reported. January 1, 156 pounds; January 24, 158 pounds, a gain of 2 pounds in twenty-four days. This patient is not a favorable case; has variable temperature and chills occasionally. It seems to be a mixed infection.

Nicholas Schappo, age 56; pulmonary tuberculosis, second stage, two years' duration; night sweats; left apex dull; coughed considerably at night, and expectorated very much; bacilli of tuberculosis in great numbers. Weight December 1, beginning of treatment 108 pounds. Weight January 26, 107 pounds, loss of 1 pound. Vital capacity December 1, 140 cubic inches. January 26, 150 cubic inches, a gain of 10 inches. This man is ageing and broken down generally and is not a favorable case although he more than holds his own. He has now stopped declining and I may say his lung capacity is better.

Conrad Opperman, age 47; pulmonary tuberculosis in the third stage, duration six months. Mother died of consumption; has had night sweats; was exceedingly emaciated and very weak. Cavity in the right infra-clavicular region. Has diabetes (diagnosis of Dr. Ehrlich); coughed in the morning considerably; bacilli very numerous. Weight at the beginning of treatment December 1, seventy-nine pounds. Weight January 26, eighty-two pounds, a gain of three pounds against continual loss before. Vital capacity at beginning of treatment fifty cubic inches. Has varied since then between fifty and seventy. This man was a stretcher case, brought to the hospital helpless. Could not get up the steps for a long time. Even after some treatment he was very thin. Is now improved, coughs little and is in better health in spite of his diabetes or glycosuric condition. Bacilli much decreased in quantity.

Fritz Arnold, age 59; pulmonary tuberculosis. second stage, duration two years. Tuberculosis in the family; coughed persistently; expectoration profuse; bacilli numerous; appetite bad. Weight at the beginning of treatment, December 1, 122 pounds. Weight January 26, 127 pounds, a gain of 5 pounds in eight weeks. Lung capacity December 1, seventy cubic inches. Vital capacity since has varied between 80 and 110. This is a broken-down constitution generally, but has improved in spite of it. Bacilli now scarce.

William Murray, age 41; pulmonary tuberculosis second stage, duration one year; family history good; is a drinking man; consolidation right apex; night sweats; blood in sputum; appetite poor; coughed a great deal; bacilli very numerous; expectoration profuse. Weight Dec. 1, 1894, 132 pounds. Weight January 25, 134.5 pounds, a gain of 2.5 pounds. Vital capacity at beginning of treatment seventy cubic inches. Vital capacity January 26, 120 cubic inches, an increase of 50 cubic inches.

Thos. Bennett, age 64; pulmonary tuberculosis, second stage; been coughing four months; very emaciated; affected with long standing gastritis; right supra-clavicular region involved, dull. Lung emphysematous; appetite poor; coughing considerable; sputum tinged with blood sometimes and contained bacilli of tuberculosis. Weight December 1, at beginning of treatment, 125 pounds. Weight January 26, 130 pounds, a gain of 5 pounds. Vital capacity keeps 110 cubic inches.

Martin Lemp, age unrecorded; tuberculosis first stage; bacilli numerous. Weight at beginning of treatment December 1, 131.5 pounds. Weight when discharged January 10, 151, making an increase of 19.5 pounds. Lung capacity increased from 170 at the beginning to 190 when discharged. This case was treated a little over a month and a half. He had been reduced greatly in strength and flesh, was unable to work and had to leave his family for the City Hospital. Has now returned to work. Have had no chance to examine his sputum since discharge, when no expectoration existed, to investigate the microbic question.

I purposely omit saying anything about the physical symptoms after treatment to date. This is a record to show general improvement to date, particularly to demonstrate that the great prostrating debility of consumptives (the very ground of tuberculosis as some term it) is the first thing to yield seemingly to the effects of serum.

The following are cases treated and reported by Dr. Cale:

Dear Doctor Paquin:—I inclose, herewith, reports of the cases of tuberculosis which have been under my care and treated with your immunized blood serum.

Case 1.—Charles J. M., aged 23 years; family history good; was in perfect health until seven months ago; since that time has had a cough, fever in afternoon and subnormal temperature in morning, loss of appetite, loss of weight, night sweats, etc. Small cavity in apex of left lung; large amount of expectoration; bacilli found in sputum in large numbers. Date of first treatment Dec. 22, 1894. The case has progressed nicely. Cough much less; expectoration less; no night sweats and gain in weight of three pounds in two weeks. During the last six days has gained two pounds, sleeps well; in fact all the symptoms have improved.

Case 2.—W. A. Buckley, nurse at the poor-house, age 33; family history good; attack dates back two years; cough, expectoration; pain in left side at base of lung, where a small dull area was found; loss of appetite and weight; had had night sweats for two months preceding December, 1894. Bacilli in sputum. Treatment during December and two weeks in January. No cough or any bad symptoms since

January 1. Dullness disappeared and gained six pounds in weight. No night sweats; temperature normal; no more expectoration.

Case 3.—George Roth, age 63; tuberculosis in third stage; family history good; temperature ranged from 96.5 to 103.5; cough frequent; expectoration; night sweats; no appetite and loss of weight; bacilli present. Treatment seven weeks. No cough. Gain three pounds.

I have treated irregularly, during a few weeks, two or three more cases at the poor-house, but they are insane and the treatment was not done satisfactorily. However, there was some improvement even in some of them.

GEORGE W. CALE, M.D.

All these records were kept accurately by the physician and nurse in charge of the cases at the City Hospital, and by Dr. George W. Cale, the physician who was put in charge of the poor-house cases, whose valuable assistance I secured as soon as I had gained the idea that I was in possession of blood serum truly useful for the purpose intended. Dr. Cale was selected because of his qualifications in microscopy and surgery, accomplishments required in a man whose help was needed to verify the diagnosis of each case microscopically, and to give an

Daily Record of Cases of Tuberculosis

UNDER DR. PAQUIN'S TREATMENT

Name of Patient

Ward

Hospital

Daily Supervising Physician

Special Treatment

Date First Treatment Hour

Month

	Date	Tem. 3 to 6 P.M.	Date	Tem. 3 to 6 P.M.	Date	Tem. 3 to 6 P.M.	Date	Tem. 3 to 6 P.M.	Date	Tem. 3 to 6 P.M.
Monday,		F°		F°		F°		F°		
Tuesday,										
Wednesday,										
Thursday,										
Friday,										
Saturday,										
Sunday,										

RESULTS:

Spirometer Tests: First before Treatment:

SUBSEQUENT TESTS:	Monday	Wednesday	Friday
Month	Monday	Wednesday	Friday
	Monday	Wednesday	Friday

Remarks on Case:

Signed: ..... M.D. ..... Nurse

opinion on surgical cases of tuberculosis, which I wished to secure for experiment. The sputum of every case treated, contained the bacilli of tuberculosis. Dr. Cale mounted specimens from each, and he and I examined every one of them. They have been labeled and kept for future reference. At the City Hospital, after the inauguration of the treatment, the immediate supervision of the injections and attendance was by Dr. Ehrlich, who did his duty carefully and conscientiously. Mrs. Johnson, a very competent woman, was in charge as nurse.

Blanks worded as the sample shown were used, blank A being for the daily reports, and blank B for the history, nature, etc., of each case, and the compilation of the daily records at the end of each month. And so, for each case every precaution was taken that seemed necessary to insure reliable records and to convince the medical profession of the truth of the facts reported.

THE PREPARATION OF THE SERUM AND ITS APPLICATION.

By laboratory processes I gradually rendered horses more strongly refractory to the action of the germ than they are naturally. Immunization was carried on with the assistance of a deputy veterinarian, Dr. Rouif, of this city, who had previously kept the horses under surveillance and had examined and tested them carefully with me, and independently, until we had fully convinced ourselves of their healthfulness.

Having immunized horses and tested the serum by experimental processes, and noted its effects on animals, and having injected it in myself several times, at intervals and at increasing doses to determine its reaction, it became necessary to procure a number of tuberculous patients to test its value in human consumption. With this object in view, I

Record of Cases Treated for Tuberculosis.

BY PAUL PAQUIN, M.D.

Name ... Age ... Sex

Where Treated

Residence and P. O. Address

BEFORE TREATMENT.

Weight ... Stage ... Duration

Nature of Case

Blood

Range of Temperature

Microscopic Analysis

Physical Condition

Range of Respiration ... Spirometer Tests

Chest Capacity Expiration ... Inches Inspiration ... inches

Appetite

Cough

TREATMENT.

Date begun

Special: Constitutional Antizymotic, i. e. to Blood Serum

General and Accessory: Constitutional Tonic; Local; Inhalations; Hygienic; Dietary

Dates and Quantity of Injection and Daily Chart Temperature from 3 to 6 P. M.

Month

	Date	C. C.	Tem.	Date	C. C.	Tem.	Date	C. C.	Tem.	Date	C. C.	Tem.	Date	C. C.	Tem.
Monday,			F°			F°			F°			F°			F°
Tuesday,															
Wednesday,															
Thursday,															
Friday,															
Saturday,															
Sunday,															
TOTAL															

Weeks as

RESULTS.

Weight ... Increase or Decrease in ... Months ... Pounds

Range of Temperature ... Compared with ... Previous to Treatment

Physical Condition

Microscopic Analysis

Respiration ... per Minute, against ... at Beginning

Chest Capacity: Inspiration ... Inches, against ... before Treatment

Appetite

Cough

Blood

Prognosis

Remarks

Signed ..... M.D.

The case referred to in above record was treated at the ..... Hospital

by Dr. Paul Paquin, assisted by ..... and was under my general supervision

The record is correct.

..... M.D.

secured from Dr. Homan, Health Commissioner, the permission to select a few cases at the poor-house for treatment, and also secured from Dr. Marks, Superintendent of the City Hospital, leave to try the remedy in this institution. Both of these officers have been very kind. They turned over to me and my colleagues all the cases we wanted and expressed their good will in many ways. I owe them my sincere thanks for their generous assistance and am under obligations to them, as also to the physicians of the poor-house.

The treatment began with injections of 10 drops hypodermically in the back between the shoulder blades. In a few days we increased to 20 drops.

Then to 30, 40 and 60. Some were given as many as 70 drops once a day for awhile. To a few in private practice, I have injected as much as 150 drops at one sitting every day for several days. No reaction whatever followed these injections and the pain is no greater than during the usual injection of a morphin solution. There resulted no accidents whatever from over fifteen hundred injections in the various patients, as a whole, except at the City Hospital where two benign abscesses were produced. They were without doubt due to accidental infection by the syringe, probably the leather ends of the piston of the syringe used at the time, or the needle. Careful disinfection of the syringe will always prevent this occurrence. The serum is, in fact, innocuous, absolutely so, if well prepared.[4]

PROSPECTS OF SERO-THERAPY.

The future of the serum therapy in several infectious diseases seems assured beyond peradventure. We may have been too enthusiastic and may have expected more than we can now obtain, perhaps, and possibly the great enthusiasts may be painfully disappointed in their hopes for immediate or remote wonders from the sero-therapy in diphtheria, tetanus, etc., but the fact will always remain that this system is unquestionably rational and that eventually, all indicate it must yield success in therapeutics where all else must fail, for it is the one rational, truly physiologic treatment, the only treatment in my humble judgment from which can be derived positive beneficial results in the cure of infections. It is nature's own remedy. Man with the serum is using nature's own weapon of defense; he has found out how he may add power to the natural resources of the organization in the fight for human existence. This system of treatment is not a spontaneous eruption in therapeutics. It is not the explosion of over-zealous laboratory delvers with more enthusiasm than experience; it is the result of years of research in all the laboratories and the chief clinics of the civilized nations, particularly France and Germany. And it is not only yesterday that it appeared in practice. It was several years ago that Kitasato applied his antitoxin experimentally against tetanus. Diphtheria has been treated successfully a year or more. Syphilis is now, it is stated, treated experimentally with it, and lastly your humble servant begs to submit to your indulgent criticism the result of his meager labors, conducted under extreme difficulties, and without State or any outside financial aid. The future of sero-therapy in tuberculosis is, in my mind, very bright and very promising. The first, the second and the third stages of consumption have been benefited under unfavorable circumstances by even slightly immunized serum. Consequently, it is only fair to reason that with more strongly immunized serum, such as I have now ready to use, (I have only a limited quantity) much better and quicker results can be obtained, particularly if proper hygienic and dietetic conditions are obtained. Theoretically, it would seem that, if by the use of this serum constitutionally, the tuberculous processes may be arrested in a given case, injections directly in the pulmonary cavities where these exist, or the excision of a rib or two and the use of tubercle antitoxin directly into the wound, would prove practicable and useful to save life. It would seem, too, that such cases as hip joint disease, which, according to statistics, is more successfully treated by the expectant therapy than active operation, could be safely operated after the arrest of the tuberculous process for, as Koenig has pointed out, it is the operation that disseminates the bacilli in such cases, so many of which terminate fatally after the usual surgical interference and the usual after treatment. And so in all surgical cases of tuberculosis, whether it invades the bones, the joints, the ovaries, the skin, the tendons or other organs, or several of them, if the serum will, by some means, stay the microbes, as I have every reason to believe it will, there is ground for congratulation on its introduction in therapeutics.

Besides the use in the treatment of tuberculosis, we have a pomising means of protection of those exposed, by the practice of periodical injections of antitoxic serum, which may render the susceptible immune, for awhile at least. As a prophylactic the antitoxic serum should prove very useful in the preservation of families tainted by inheritance, or exposed to the germs from their birth.

In closing, allow me to summarize the opinions arrived at after my few years of investigation and observations, and the recent incomplete practical tests of my colleagues and myself.

1. Sero-therapy in tuberculosis has proved, so far, efficacious.

2. Blood serum of horses seems naturally antagonistic to the germs of tuberculosis, but can not in its natural state serve in treatment with much good, as it is too slow and it takes enormous quantities of it too, to produce useful results.

3. Horse blood serum may be rendered more strongly antagonistic to the tubercle germ by the proper treatment of the animals by a proper technique.

4. A horse treated properly three months may yield serum with immunizing power that will probably prove sufficient to arrest consumption in the first stages in three or four months, and sometimes less; and in the second stage in four to six months or a year.

5. Discrimination should be made in the selection of cases, and judgment exercised to exclude from the favorable class all those seriously complicated bacteriologically, certain cases complicated otherwise pathologically, and other patients which practice alone will suggest.

6. Inasmuch as hospitals for consumptives are needed any way, the success has been sufficient already to warrant the hope that in the near future such institutions shall be built on modern principles of hygiene, for the exclusive treatment of tuberculosis. Sero-therapy, with the adjunct treatments promises better success than ever obtained before. I do not designate this serum as a *cure* or a *specific*, but a valuable new remedy.

TECHNIQUE.

As to the technical features of the preparation of the anti-tubercle serum, I have little to say at present. The profession realizes that success with the serum therapy depends on accurate and delicate laboratory and experimental manipulations which few are fully equipped to undertake. The preparation of the toxins, the measurement of their potency, the dosage for the realization of various degrees of immunity; and, finally, the inoculations of immune animals and the subsequent tests of the therapeutic value of the serum

[4] Since reading this paper we had a harmless rash in a few cases.

extracted, are all questions of great moment, and which necessarily involve special training. Commercialism might, at any moment, by some failure or accident throw discredit on the new treatment, were I to explain fully before advancing my researches to a point where a larger number of improved cases and greater benefits, can be shown the details of procedure in the production of the agent. As yet only a small quantity of serum is on hand —not enough to offer to the profession, having under treatment some thirty cases whom I have promised and wish to inject for some time to come. The production of the serum is costly, and above all it takes months to get the best material. I have reason to believe, however, that it will be possible to shorten the time that has been found necessary to strongly immunize the horses now in use.

THE EARLY DIAGNOSIS OF CARCINOMA OF THE STOMACH, WITH THE BACTERIOLOGY OF THE STOMACH CONTENTS.

BY FENTON B. TURCK, M.D.

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(*Continued from page 319.*)

After the study of sixteen cases Rosenheim (*Berl. Klin. Woch.*, Dec. 24, 1888) concluded that the chemic insufficiency of the stomach in carcinoma ventriculi is not due to the cancer itself, but to the attending atrophy. He divided the pathologic changes into three stages: inflammatory, interstitial and atrophic; adding that these stages may be present at the same time; and Ewald (*Berl. Klin. Woch.*, Dec. 3, 1888) holds that the disappearance of HCl is not due to carcinoma directly, but is merely a disturbance of the functions of the secretory glands.

The post-mortem changes often veil the pathologic changes, unless well marked and permanent lesions occur. It is best, if possible, to secure specimens during an operation for carcinoma of the stomach as far remote from the tumor as possible. In three operations I secured several sections—one for carcinoma planum (anterior wall) where a large area was removed, leaving a border of tissue not infiltrated by cells from the carcinoma; the other two were carcinoma of the pylorus. The sections were cut with a Valentine knife in the fresh state and placed on a slide; 50 per cent. solution of glycerin with a little oil of cloves prevents the change.

A solution after stain in 50 per cent. glycerin is used, for staining, and "irrigated" through according to the old method of Beale. (For making permanent mounts Price's pure glycerin is carried under the cover glass and ringed with cement.) There appears the pathologic changes of inflammation. No distinction between parietal cells and chief cells; cells loosened from their membrane; karykinesis were illustrated; nucleus crowded to one side; gland cells swollen, closing the lumen; nucleus forced to one side; cells of the mouth and neck crowded together as in proliferation, and lying within the lumen; at other points cystic degeneration, mucoid metamorphosis of pathogenic cells, as shown by Ewald and Boas; leucocytes fill up about the neck and through to the surface of the gland; other points show marked interstital changes; multiplication of round cells; vessels engorged flush up to the surface of the mucous membrane, where a rich anastomosis occurs at the mouth and neck of glands. If it is not alone the product formed in the growth of carcinoma of the stomach that causes this inflammatory and rapid destructive process through the infection from growing pathologic and so-called non-pathologic microörganisms colonizing upon the surface of the mucous membrane offers a possible explanation of these changes. Within the lumen of the stomach all forms of germs find their way.

The master work of Miller ("Microörganisms of the Human Mouth," 1890,) has proved that the mouth may become an ideal incubator for at least twenty-five varieties. The nose and pharynx may become an excellent bed for colonization upon the walls. Food and water are by no means aseptic—if we prepare the stomach walls so that colonization may also exist, we have a process set up in proportion to the character of the colonies found—the culture bed and conditions present. In the healthy state the stomach does not seem to encourage colonization in the bed of mucus upon its walls, although germs find their way into its lumen. This will be brought out in another work in relation to gastritis. The predisposing cause seems to be the growing carcinoma—lessening resistance and furnishing a soil,—the inflammatory process, the result of the toxins of the colonizing microörganisms. Well-known pathologic germs produce their special toxins and even the lactic acid bacillus, as shown by Wurtz and Lindet (*La Semaine Med.* Paris, Sept. 9, 1892) produce in animals marked symptoms of diarrhea, distension of the abdomen and extremely rapid emaciation. They learned that cultures in bouillon are very active—toxin is formed having the same effect as the culture itself.

Through the kindness of Dr. Ryan, Louis S., age 40, Italian, was referred to my clinic November 27, complaining of "pain in his stomach and back." No specific history. Family history negative. Experienced no difficulty until within nine months, when there appeared a distress after eating. Appetite remained good; insomnia at times and dyspnea at night. No vomiting. Alternating constipation and diarrhea.

Examination: Skin dry; some evidence of emaciation; mouth, gums inflamed at borders; tongue, light yellowish coat; nose and throat showed no marked lesions; chest organs intact; abdomen, muscles well developed; liver and splenic area normal; stomach, percussion shows slight distension; half moon space of Traube slightly increased; prevailing sound in stomach demonstrated the great curvature one and one-half inches above the umbilicus; no palpable tumor; colon dilated; tympanitis controlled with water and air gave the same results; rectum negative; genito-urinary organs negative.

Analysis of stomach contents two hours after ordinary meal: HCl+; total acidity, 40; Uffelman's +; blood count 4,800,000. November 27, hemoglobin, 70; fasting stomach twelve hours after meal; reaction neutral. No remnants of previous meal; no stagnation.

Bacteriologic: Six slides stained for microörganisms, after removing mucus from them and mucous membrane with gyromele, four fresh slides unstained. A fine network of long rods appearing like mycelia but more angular. Short rods; colonies in groups attached, end to end and in pairs; streptococci in twisted chains; groups of micrococci; a few yeast germs but no socius ventriculi appeared in the field.

Bacteriologic cultures: Stroke culture on sterilized mucous membrane of the stomach of a pig; first stroke line colonies run together; second stroke more separated, especially at side of furrow of the line; pink colonies; grayish colonies spreading; yellow colonies; brown and a few black colonies raised;

as many as ten or twelve different colonies present. On separating out into tubes the short rods seemed more curved and the threads appeared changed. The long slender rods that formed a thick network and a luxuriant growth on the mucous membrane died out in the tubes. The pyogenic germs appeared, as well as bacilli coli communi. Five colonies were lactic acid forming bacilli.

Tube cultures taken direct from the stomach wall: Tube No. 1, left in stomach juice; No. 2, milk (sterilized); No. 3, bouillon made from stomach of pigs; No. 4, same as No. 3 with starch added; No. 5, plain bouillon; No. 6, same as No. 5, starch added. All placed in incubator at 36 C. for twenty hours.

Reaction: All acid reaction except bouillon culture No. 5. Nos. 2 and 4 showed lactic acid. No. 4 was especially marked. The fluid was filtered and extracted with ether evaporated which gave a fair iodoform emulsion. No quantitative estimation made. December 6, ordered meal soup according to Boas method. December 7, withdrew and analyzed. Lactic acid, 85 per cent.

December 15, entered hospital of the Post-Graduate Medical School; oatmeal soup of Boas at night. December 16, withdrew stomach contents. Analyzed by Dr. Wisner showed lactic acid, 75 per cent. Operation ordered; stomach washed out and December 17 I performed laparotomy, assisted by Dr. Beck, and found a scirrhus carcinoma, two nodules at pylorus; one anterior and one posterior tumor, extending from the end of the lesser curvature. Gastro-enterostomy with Murphy button. Patient was attacked with violent hiccough and vomiting; stomach cleaned and fed per rectum; temperature remained normal. December 24, patient died. Post-mortem refused.

July 10, 1894, Mr. F. K., age 53, German, was referred to my office as a stomach case. Complained of pain over xiphoid appendix through to the back. Began to vomit about a year before; had to live on liquid food; dysphagia. Examination: Emaciated; could not pass stomach tube, attempted to pass the revolving sponge but met resistance at the cardiac opening; by using smaller sponges tried to explore the stricture. The cable and spiral within the sponge being more flexible than the ordinary sound there was less fear of puncture. Found a diverticulum containing remnants of undigested food; sputa negative; no albumen or sugar in urine but indican increased. Diagnosis: Carcinoma of the cardiac.

On July 23 gastrostomy was performed by Dr. Newman and myself. Introduced the gyromele through the stomach opening dilated, and passed a rubber tube through the stricture to the mouth. Examination of stomach contents, reaction neutral. July 24, made slides but no cultures were carried out. Slides showed many varieties of long and short rods, especially spirilla. After a gruel injection a slight Uffelman reaction, but not marked. July 28, patient died. No post-mortem allowed.

August 22, 1894, Mrs. S. G. S., widow, aged 65, referred, complaining of distress and burning sensation in stomach after eating. I was told that if carcinoma was thought to be present an operation would be allowed. It is often more difficult to exclude than include. The history, symptoms and general appearance favored carcinoma. Within one year loss of appetite and weight, progressive anemia, morning headache, constipation, belching after eating. Physical examination: Hair dry and brittle; skin dry; panniculus adiposus absent; color, pale, ashy hue. Teeth in good repair; tongue silver gray coat; depression of teeth. Nose and throat atrophic; rhino-pharyngitis; slight discharge from the vault Lungs negative. Heart, faint mitral murmur. Liver palpable below costal arch. Abdomen retracted. Stomach gastroptosis; transverse colon upper border below umbilical line; prolapse of right kidney, second degree.

August 23, withdrew contents after Ewald's test meal. Litmus +; no HCl; Uffelman's +; peptone weak; urine contained no albumen, blood or sugar 4,560,000; hemoglobin 55. August 28, four hours after meal, stomach was empty; weak acid reaction. August 30, after Boas' test meal, Uffelman's reaction very weak. No iodoform, showing practically no lactic acid. September 1, bacteriologic: Removal by the revolving sponge of mucus thick and tenacious. Slides show the mucus contains cells of the glands, columnar, round cells, leucocytes, also flat cells, a large number of colonies of rods and micrococci. Tube cultures showed many gas forming germs to be present.

A diagnosis made of gastritis chronica, with beginning atrophy and the complications named. Patient put under a vigorous treatment. Stomach walls cleaned with liquid soap, using the gyromele; oil of cloves and cinnamon applied. HCl exhibited in large repeated doses, as recommended by Ewald. A selected diet ordered, baths and massage.

September 9, recorded that the headache disappeared, the distress in stomach lessened, with but little belching of gas. September 18 recorded appetite much improved. October 29, disappearance of all symptoms. November 24, patient discharged, but requested to report in one month.

Examination of stomach contents after test meal showed HCl + weak; total acidity 35, Uffelman's; general condition improves; gain in weight and strength; no return of symptoms. December, patient considers herself cured, which can not be. No evidences of carcinoma.

(To be continued.)

THE MEDICAL CORPS OF THE U. S. NAVY.

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In connection with the early history of the American Navy as developed into a distinct arm of the national defense, it is interesting to recall the fact that its embryonic origin was first developed in Virginia under royal authority. As early as 1775 the convention of the colonists of Virginia had directed the Committee of Safety to procure armed vessels for the defense of the colony, and the control and management were intrusted to this committee. Accordingly in May, 1776, the House of Burgesses of Virginia foreseeing the coming struggle with the mother country for the independence of the colonies, and recognizing that the vessels of the merchant marine of James River and border harbors of Chesapeake Bay constituted the elements, if armed and equipped, of a squadron already manned by sturdy sailors who had knowledge of the sea, and commanded by officers of the pluck and experience which have ever characterized the captains of the Marine Service, appointed a Board of Naval Commissioners consisting of Thomas Whiting, John Hutchins, Champion Travis, Thomas Newton and George Webb, who met first in Williamsburg, then the capital of Virginia. These men adopted a plan for the creation of a naval force of seventy vessels which had been employed for purposes of commerce, having been constructed at the Chickahominy Navy Yard, near Norfolk, Va. Among the naval surgeons commissioned for this service during the Revolution were Dr. Balfour, an eminent physician of Norfolk, Va.; Kemp, Lyon, McClurg, Brockenborough, Christie, Reynolds, Sharpless, Pell and others. It was after this period that the seamen and naval forces of the New England States were organized for the national defense. At this period the merchant marine were not usually provided with a surgeon, and physicians who were competent to practice were obliged to go abroad to the universities of Edinburgh or Cambridge to obtain a diploma. In 1764 when the first medical college in America was founded in Philadelphia, now the University of Pennsylvania, and afterwards in 1825 when the University of Virginia had established a medical department, in 1827 the supply of surgeons for the naval service was equal to the requirement, though it may be added in the early days of the colonial period, "physick was not regarded as a fit profession for a gentleman of Southern birth, who, haply was possessed of ample fortune, and had no need to practice a profession."

Among the surgeons commissioned first were W. A. W. Spottswood, Cornick, Harris, Chase, G. R. B. Horner, Brownlee, Whelan Maxwell, Temstell, Squibb, Elisha Kane and others. Surgeon-General

Harris, while chief of the bureau of medicine and surgery contributed to systematize the work committed to the naval medical officers and proved equal to the arduous duties of his office; and with his successor, Surgeon William Whelan, elevated the standard, intellectually, and scientifically, for the admission and promotion of the junior medical officers of the Navy and also aided in promoting the success of the repeated explorations of Passed Assistant Surgeon Elisha K. Kane, in vessels fitted out by Mr. Grinnell and the Navy Department in command of Dr. Kane, and also in expeditions to Paraguay and to Japan in 1851. The war between the United States and Mexico occurred during Dr. Harris's term of office, and the war of the Rebellion in this country during that of Surgeon-General Whelan's term. The surgeons in active service during this period displayed uncommon ability and zeal in the performance of their duties, and their printed reports to the office of the Surgeon-General furnish valuable data connected with the various branches of practical medicine and surgery. A decided impetus for such publications was given to the Naval Medical Corps by the stirring events which then occurred. Under the direction of Surgeon-General J. C. Palmer and Medical Inspector A. L. Gihon, a neat volume of medical essays, compiled from reports to the Bureau, were published by order of the Navy Department. Surgeon R. C. Dean, Medical Inspector, U. S. N., made a valuable report on the naval medical schools of France and England, showing the liberal policy of the governments of those lands toward their naval medical officers. For example, in Great Britain there is established a naval medical school for the Army and Navy at the Royal Victoria Hospital at Netley. Here a per diem of 5s. is allowed the officers, with excellent quarters and subsistence, and according to a late Navy List of the British Admiralty, a liberal pension is allowed not only the widows but the children also, of the medical officers. Dr. J. D. Gatewood, Surgeon, U. S. N., contributed a valuable report on Hospital Statistics of the Naval Hospitals of Europe, showing that the average mortality was as low as 10 per cent. for the Royal Naval Hospital at Great Yarmouth, England. This report was read before the Medical Congress of the Columbian Exposition at Chicago. Among the earliest authors of the Naval Medical Corps who have, from time to time made valuable contributions to current periodical and book literature are Surgeons Ruschenberger, G. R. B. Horner, Foltz, Wilson, Wales, Brown, Wise and others. Among such publications may be enumerated: "Endemic Influence of Evil Government and Medical Statistics of the Island of Minorca," by Surgeon J. M. Foltz; "Medical Topography of Brazil," "Medical Statistics during a Cruise to the Mediterranean" and "Naval Surgery," by Surgeon G. R. B. Horner; "Arctic Explorations in the years 1853–54–55," by Elisha Kent Kane, M.D., U. S. N.; "Naval Hygiene," by Surgeon Wilson; "Mechanical Surgery," by Surgeon P. S. Wales. Such contributions betoken a commendable zeal and industry on the part of the authors, furnish evidence of their talents and erudition, and present examples worthy of imitation.

The second epoch in the history of the American Navy was marked by the occurrence of the Civil War, when a large number of naval surgeons of the Southern States either resigned from the service or refused to take the required oath of loyalty to the Federal Union and were dropped from the registered list when the reorganization of the Navy was effected in 1861. A small number were true to the old Ship of State, ready to be scoffed at by erring ones, and, perhaps, because of the spirit of an ancestry that had signed the Articles of Confederation, the Declaration of Independence and the Constitution of the United States. Among others of this number were Surgeon G. R. B. Horner and the writer, and of those who also thought they were right were Surgeon Dinwiddie Phillips, of the ironclad *Merrimac* and Surgeon Galt, of the *Alabama*.

The decade which succeeded the return of peace to the country was marked by an accession to the number of naval medical appointees from the Southern States, and during the intervening period the strength and efficiency of the Corps has been greatly developed. The number of 170, the maximum allowed by Act of Congress is meager indeed in comparison with the 502 surgeons of the British Navy, with its Director General a Baronet of the realm, and a corps of inspector-generals; first class, staff officers; second, surgeons and fourth, medical inspector-generals of the royal hospitals at home stations and abroad. In this connection it may be remarked, *en passant*, that American authorities do not show the favor to our Naval Medical Corps, that they do to line officers, who as cadets and ensigns whose education and maintenance at the Naval Academy, Annapolis, cost the taxpayers of the country $500 a year for each cadet. The surgical staff has no such bonus accorded them at any period of their service by our Government.

Finally, it may be asserted with truth, that the Medical Corps of the U. S. Navy has ever maintained a high professional status, and an *esprit du corps* challenging criticism. Through the efforts of Surgeon-General Tryon, the U. S. Naval Laboratory and Department of Instruction has been founded in Washington City. The courses in bacteriology and analytical chemistry have proved valuable and instructive to the class of Assistant Surgeons, candidates for examination and promotion to a higher rank. The U. S. Naval Museum, now removed to the Naval Observatory Buildings, has already proved useful in developing all that is of value in the sphere of mechanical inventive art, as well as forming the nucleus of a fine library. Surgeon-General P. S. Wales and J. Mills Browne during their terms of office contributed largely toward the success of the Museum and founded in connection with it a Naval Medical Society, before which were read and discussed interesting medical and surgical papers that were published under the supervision of Surgeons Van Reypen and Beyer. A few retired medical officers of the Navy were Fellows of this society, and were glad to exchange greetings with old friends, and enjoy the privilege of taking part in the proceedings. The Naval Medical Staff has able representative delegates appointed to the annual meetings of the AMERICAN MEDICAL ASSOCIATION, to the Association of the Military Surgeons of the United States, to the various international medical congresses of the world, and the American Public Health Association.

The admirable report of Surgeon-General Tryon urges the necessity of an organized Hospital Corps, well instructed for all duties on board modern vessels of war, and concludes with the statement that thirty permits were granted to applicants, to be examined by a late Board of Naval Medical Examiners; of the

thirty, ten failed to present themselves, five were rejected physically, twelve professionally and three passed the examinations. The Naval Medical Examiners have, in fact, no option than that of exclusion of many talented and learned men from the Naval Medical Corps, because the legal number of 170 surgeons, passed assistant, and assistant surgeons, as already stated, is the number allowed by law, though the Navy of the United States represents a nationality of 65,000,000 people.

The comment may be pardoned that concerning the bill for the reorganization of the *personnel* of the Navy, the legislators of Congress, themselves dependent at times more or less upon physicians and surgeons for relief, surely may be trusted to do right toward the interests of the Naval Medical Corps.

Congress may recall that Passed Assistant Surgeon E. K. Kane proved to be not only equal during his medical service to professional duty, but developed into one of the most renowned captains of the nineteenth century, the discoverer of a terra incognita, Washington Land and an open Polar Sea in higher latitudes than ever before explored, to attain which even the courage and sagacity of a Columbus would hardly have undertaken it, and in the accomplishment of which he solved the mystery—so long desired in vain—of the fate of his illustrious co-explorer, the lamented Sir John Franklin.

Congress knows, also, that Surgeon James M. Ambler proved his heroic mold by remaining with the brave Commander DeLong, choosing death by cold and starvation with him and their comrades, than to accept the offer to escape and seek help.

Congress knows how Dr. John B. Hamilton, when Chief of the U. S. Marine-Hospital Service, with his efficient co-workers rescued hundreds of the fever-stricken citizens of the cities of the Southern States in the midst of the "pestilence that walketh in darkness and the destruction that wasteth at noonday," by the establishment of refuge camps and the enforcement of prompt, incisive and strict sanitary and quarantine regulations; and with a kindred spirit, Dr. G. B. Thornton, when the Mound City of the West was decimated by a like scourge, with soldier-like courage and vested municipal authority had destroyed streets of houses, and chattels teeming with the germs of a death-dealing plague. And thus, these self-sacrificing physicians with others, who bear the mantle of the Divine Physician and stand between the living and the dead, fearlessly sought to save life; yea, with equal courage with Surgeon Edward Shippen were faithful to duty, as he was when he conveyed an order—Perry-like, of Lake Erie memory—in the harbor of Charleston in the face of the raking fire from the enemy, from one ship to another.

Indeed, it is not presumption to recall the fact that the physicians and surgeons of the United States Army and Navy, during the late fratricidal war, on the assertion of the late Prof. S. W. Gross contributed to perpetuate the Federal Union, since this class as non-belligerents and as represented by the AMERICAN MEDICAL ASSOCIATION, "suffered no disruption of the fraternal bonds which united them as brethren." Men of this stamp are entitled to be fairly dealt with by their peers of the Naval Service, and by the people's representatives in Congress, whatever reorganization of the *personnel* of the Navy may be agreed upon.

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ETHYL BROMID ANESTHESIA IN POST-NASAL ADENOID GROWTHS.

Read before the Chicago Medical Society Feb. 4, 1895.

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The subjects of "adenoids" is such a well-worn one that I would not venture to bring it before the society, had I not been encouraged in my doubts as to the proper way of operating on these growths, by a recent discussion of this very question at a meeting of the London Laryngological Society. It appeared there, too, how wide is the diversity which exists as to the choice of the anesthetic, the posture of the patient, etc. Since conditions are different with us, especially resulting from the preference given ether over chloroform by the profession at large, and the popular distrust in which the latter drug is held; since, furthermore, this mode of operation with ethyl bromid has not been described in American literature, I am in hopes that the discussion called forth by this short paper will prove to be out of proportion to its length.

While it is held by many that anesthesia is not to be induced for this operation, I make bold to consider it both cruel and immoral unnecessarily to inflict severe—and often, quite severe—pain on a nervous, terrified, struggling child. The poor little one can not accept an adult's logic; to it this manipulation is as frightful as a much larger one would be to its parent; and the latter, not infrequently, prefers to escape even the momentary pain caused by the extraction of a tooth. It further demoralizes the child, who should look upon the physician as its friend, for whom it will open its mouth when requested to do so. Children have excellent memories for injuries and insults offered them. One little girl, for instance, was held by her father and two other men while the physician amputated the tonsils about three years ago. She can not be prevailed upon to enter that office building again, and still retains the adenoids and an abiding distrust of physicians. To use main force seems to the child's mind as convincing as the wise answer given by the proverbial eagle to the little bird protesting against being devoured, "but I am big, and you are small."

The numerous operations on the non-anesthetized child which one had opportunity to witness or perform at the Berlin Laryngological Clinic appeared unsatisfactory to me (and since then the method has been changed there). I, therefore, advise anesthesia in younger children, but operate without it in older children when there is only a hypertrophied Luschka's tonsil which can be removed *en masse*. Chloroform and ether were employed by me in a limited number of cases. The child lay either on one side, or on its back with overhanging head. Chloroform is not feared without good reason; there were nine deaths in England alone within one year in just this operation. Ether, on the other hand, is very disagreeable to both patient and operator, as it takes much longer

to produce anesthesia, often causes great excitation, and increases the amount of mucus and blood to a marked extent. The severity of the after-effects, nausea and prolonged vomiting, and the undeniable dangers incidental to anesthesia with these drugs, led me to try the method I had seen practiced by Moritz Schmidt, of Frankfurt-on-the-Main. I am now able to report on a series of 100 consecutive cases in which I operated either myself or assisted Drs. Hardie and Holinger. The operation is done in the following manner: The patient's chest is first examined, as ethyl bromid should not be used in chronic heart and lung disease. Then the clothing about the chest is well loosened. I prefer to use the head mirror and reflect the light into the patient's throat. It is advantageous to have the patient on a higher plane than the operator; the patient's chin may then be lowered upon his chest, and the blood made to run from nose and mouth. If the patient is an older and sensible child he may sit upright in a chair, with a sheet about his arms and chest. It is advisable, however, to have an assistant hold a younger child in his lap, in order to restrain it if it should struggle, and to steady the head during anesthesia. A simple mouth gag should be introduced, although it is not absolutely necessary but valuable if a spasm of the muscles of the jaw should set in, as is sometimes the case, and as it saves time. We prefer to administer the anesthetic by holding a common chloroform mask covered with oiled silk closely over mouth and nose. The quantity to be used (1-2 drachms in children; 3-4 drachms in adults) is poured at once on a little gauze or cotton in the interior of the mask; the child may struggle a little in the beginning, but as the drug has a not unpleasant odor and does not irritate the mucous membrane, it is easily and quickly reassured. Often the face becomes flushed, the pulse is increased in frequency, but does not become weak or irregular; breathing becomes slower and a little shallower. In forty to sixty seconds, breathing may be slightly stertorous, the eyes begin to wander, the uplifted arm drops to the side, the right moment for operation has come. Pupillary and conjunctival reflexes do not serve as guides. For two minutes only the patient does not feel any pain. All instruments must, therefore, be within easy reach in order to save time. The tonsillotome can be adjusted accurately and quickly under the guidance of the eye in good light (Moritz Schmidt uses the hot galvano-cautery snare); the other tonsil is amputated with a second instrument. With Gottsteins's modified curved curette the adenoids are next removed, one sweep being made in the center of the vault, and a second and third one on either side. The older form of the Gottstein knife (the instrument is bent nearly at right angles) may then be used to sweep the posterior pharyngeal wall. Finally, if on introducing the finger behind the soft palate, any remnants should be discovered they may be scraped away with the nail. By this time, the child is nearly conscious, although not experiencing any pain; it opens its eyes, looks a little dazed, and appears but little disturbed. Anesthesia, operation, and recovery thus occur in five to seven minutes. The patients are ordered to lie or sit down immediately after awakening. Most of them were able to walk alone in a few minutes. Many left the office or dispensary in fifteen to thirty minutes, usually feeling quite bright and cheerful; occasionally they complained of a slight headache. Three vomited a short time after the operation. Nausea never was very pronounced. Three patients vomited several times during the day without great nausea; in the evening they were quite happy and hungry. One very high-strung and timid girl of 10 could not, at two different times with an interval of a week, be brought under the influence of the anesthetic.

During anesthesia no alarming symptoms occurred. The pulse was generally quickened, but not reduced in strength. In four cases a spasm of the muscles of the jaw set in, notably of the masseter, which was easily overcome by pressing the spatula firmly on the tongue or behind the last molar, and thus forcing the mouth open. No vomiting occurred during anesthesia, although some had eaten but shortly before. I had seen involuntary urination and defecation occur in Germany—it is reported in adults, too—but we did not meet with a single instance. Probably we do not push anesthesia far enough for that. Twice I observed a peculiar after-effect, which is not easily explained in view of the denial of good observers that the red blood corpuscles are attacked by ethylization. The children presented a grayish, rather ghastly hue in their complexion, which did not escape the attention of their mothers; and on feeling the pulse without their knowledge, I found it accelerated but strong. This state lasted two weeks without producing any discomfort whatsoever. Ethyl bromid is eliminated by the lungs only, sometimes with a garlic-like odor; no traces of free or combined bromin are found in the urine.

It is of the utmost importance that the reflexes are not abolished. The persistence of the laryngeal reflex justifies what would otherwise be a dangerous procedure, keeping the patient in the upright posture. No blood can enter the larynx without producing immediate reaction, *i. e.*, being expelled by coughing. The pieces of severed tissue either adhere to the instrument, or are swallowed or expectorated. As soon as the vault has been cleared, the patient is ordered in a loud voice, to "spit it out." Even when consciousness has not completely returned, the command is automatically obeyed. Most of the blood escapes through the nostrils and the inclined groove formed by depressing the tongue and holding the chin downwards. When the vault is again entered, in order to palpate and scrape away any stray adenoid tissue, the patient is analgesic even if manipulation should be perceived, and recalled later on.

As far as the results of this mode of operating are concerned, we are well satisfied. Recurrence took place in only one case, where Dr. Holinger yielded to the entreaties of the mother to operate on her daughter three times within six months. The parent declared that her daughter always grew stupid when the growths were there. The patient was a girl of 16 who could easily be examined with the rhinoscopic mirror. Dr. Holinger could thus convince himself that none of the growths remained behind after the operations. As far as my experience with forceps goes, it is not possible to remove all the adenoids in the limited time at our disposal. Cutting, as it usually does, transversely, it has undoubtedly caused many severe hemorrhages, primary and secondary, by nipping the posterior ends of the turbinated bodies or the posterior edge of the septum. I know of but two cases of severe secondary hemorrhage

after operation with Gottstein's curette; and in one, which happened to me, I ascribe it to the fact that I removed but little at the sitting, not having anesthetized the patient, a young woman. Even that popular and vigorously grasping forceps invented by a distinguished member of this Society may in busy hands, when one of them is introduced into the nasopharynx to guide the instrument, be the cause of much unnecessary blood-shedding. The upright position enables the operator to use the Gottstein knife quickly and effectually. The instrument is so ingeniously constructed that it is impossible to do damage with it. In cases where I found great swelling of the nasal tissues, I have applied a weak solution of cocain (4 per cent). The shrinking of the tissues allows the blood to run freely through the nose. The bromid of ethyl we employed with great satisfaction is made by Merck of Darmstadt. It is sold in one ounce, sealed, dark glass tubes. In glass-stoppered vials, it is not reliable. I have found that the liquid had entirely evaporated although the original packing had not been disturbed. The most practical form would be in one-half ounce tubes, just enough for one anesthesia in an adult. It is not safe to keep an opened bottle for any length of time, because the ethyl bromid is decomposed by sunlight or in contact with air. The best preparation is obtained, according to the German pharmacopœia, by distilling a mixture of alcohol, sulphuric acid and bromid of potassium. The product is colorless, of neutral reaction, with a pleasant odor. It must not be confounded with bromid of ethylene; a most dangerous mistake to which one death must be ascribed which was charged to bromid of ethyl. The impurity of the older preparation, and its cost were reasons against its use which do not hold good to-day.

The career of the drug is a checkered one; it has had its ups and downs. It is only just, however, to say that, like the historic queen, it is better than its reputation, and is at present in great favor. Discovered by Serullas in 1827, it was first used by Nunnely, of Leeds, in 1849, and again lauded by him in 1865. He considered it one of the best of anesthetics; a view in which B. W. Richardson declared he fully concurred. In America it was introduced by Turnbull in 1877, and extensively used by Levis, of Philadelphia, Chisolm, Conner and many others. In spite of their enthusiasm based on several thousand successful cases, the reports of a few deaths, notably one by Marion Sims, and the unfavorable results of experiments made by Wood on animals, drove it into oblivion. It would lead too far to follow in detail the arguments advanced by its adherents and opponents, although the perusal of the literature bearing on the subject (New York *Medical Record*, 1880, and other journals of that year) is most fascinating to the student of medical history. In the last five years ethyl bromid has again been taken up by the profession. It is steadily gaining in favor with German laryngologists; the Berlin Clinic reported excellent results in 200 cases, agreeing in nearly every point with our experience. Moritz Schmidt speaks highly of it in his latest book. He performs all the adenoid operations in his office with this anesthetic. German dentists are using it to a great extent instead of nitrous oxid because of the appreciably longer anesthesia. Witzel (*Monatschr. Zahnheilk.*, 1891, October), for instance, after 465 trials, calls it the least dangerous anesthetic; as much devoid of danger as nitrous oxid. His experience is most valuable, as it includes patients sent from the various clinics at Marburg; among them are six with severe diseases of the heart and lungs; eleven with pulmonary disease, etc. He speaks of the anesthesias as excellent with twenty-eight exceptions. These are given under different headings:

a. Great excitation in nine cases. Of these, four with much sweating.

b. Cyanosis in two students somewhat the worse for liquor.

c. Asphyxia, but rarely with his method (first, a few drops, then the whole quantity of the anesthetic).

d. Malaise, feeling of lassitude, vomiting.

e. Urination in three cases.

f. Great sexual excitement.

But these phenomena, he asserts, will be seen with any other anesthetic. In two cases he could not produce anesthesia with one and two ounces. In six cases he anesthetized the patient twice in one sitting; in two cases, three times.

In regard to the dangers of bromid of ethyl anesthesia, there are numerous and most contradictory statements to be found in literature. I do not wish to conceal that even with the new and purified drug, fatal cases have occurred. While one (Billroth's) would have ended just as unfortunately had any other anesthetic been used because the patient's heart was diseased; while another, occurring on the day after its administration, can not positively be attributed to it; nevertheless there are three cases in which ethyl bromid can not be exonerated. Statistics are, unfortunately, not complete enough to be of value; and, furthermore, the number is not nearly great enough to allow of any definite deductions as yet. Gurlt's statistics (*Arch. Klin. Chir.*, vol. I, 1894) place ethyl bromid between chloroform and ether.

Chloroform, 166,812 cases with 63 deaths—1.2647.
Ethyl bromid, 7,541 cases with 2 deaths—1.3770.
Ether, 26,320 cases with 2 deaths—1.13160.

These figures will certainly be modified in the next report as far as ethyl bromid is concerned, making the ratio a much more favorable one as the number of administrations increases; the Billroth case of the patient with diseased heart turning the scales most unfairly.

The discussion on this subject in the Berlin Laryngological Society (*Berl. Klin. Woch.*, No. 1, 1894) shows well how contradictory are the views held by various observers. While the essayist (Ed. Meyer), relying on 200 successful administrations, could speak highly of the lack of danger and the other good qualities of this drug, Grabower quoted the results of experiments on rabbits. He declares it to be one of the most dangerous of narcotics, if not the most dangerous one. After a few inspirations the pulse rate is greatly increased; later on arythmia; then genuine cardiac delirium with utter lack of coördination of the different parts of the heart. In a short time the heart stops. During arythmia there is no abnormality of respiration. Thus there is no warning of danger as with other narcotics. Others controverted the right to draw conclusions from experiments on animals in reference to the human economy.

In his "Text-book on Therapeutics," Hare draws attention to the studies made in Jefferson Labora-

tory, which show that the dominant action of ethyl bromid is on respiration, not on the circulatory system. Its effect is depressant, but only seen after excessive doses. Blood pressure falls under its influence to a slight degree, and the pulse is slowed through an influence probably exercised on the inhibitory nervous mechanism of the heart.

H. C. Wood, however, from a series of experiments made upon lower animals, has arrived at the opinion that it acts upon the heart in a manner similar to chloroform, although its influence is not so depressing. A more recent investigator (Brubacher) found, in experimental intoxication of rabbits and guinea pigs, that the heart always continued to beat regularly and powerfully after respiration had ceased.

Schneider, Professor of Dentistry at the University of Erlangen (*Monatschr. Zahnheilk.*, May, 1890), who uses ethyl bromid extensively in practice, made a most searching series of experiments in the Physiological Laboratory. His deductions appear well founded, and are as follows:

While it may be admitted that under the influence of chloroform the red blood corpuscles are disintegrated, producing fatty metamorphosis, we must deny a similar action to ethyl bromid in every respect; believing that we proved by microscopic, chemic, and physical examination:

That bromid of ethyl can not produce any change whatsoever in the red blood corpuscles.

That bromid of ethyl, on account of its lower boiling point, is very rapidly eliminated from the body by the lungs.

We, and with us most of the authors, have observed that even in deepest bromid of ethyl narcoses, the pupils are hardly contracted. This proves that these vapors have not an energetically paralyzing influence on the medulla, because the narcosis is reduced to a previous stage by the rapid elimination of these vapors by the lungs. It was demonstrated, moreover, by the hemodynamometer that the blood pressure always suffices for an exchange of gases; and, finally, the sphygmographic curves, of which the author made a great number, show hardly any change in the pulse tracings. This proves that contraction of the muscles of the vessels takes place while most chloroform tracings show paralysis of the vasomotors. There is a slight diminution of the blood pressure from reduced innervation. That is to say, cardiac alterations are much less than in chloroform narcosis. With at least as much right as it is maintained of ether, bromid of ethyl has only a slight depressant action on the heart; and death from ether results from paralysis of the respiratory center. When ethyl bromid was administered to animals in fatal doses respiration stopped much sooner than the heart, which continued to beat regularly and vigorously after respiration had ceased.

After all, laboratory and animal experiments do not seem to bring us much nearer to a universally acceptable solution of these questions. The long and bitter fight between chloroform and ether partisans is still raging. Until we have an absolutely safe anesthetic, if that is possible, we must content ourselves to run risks. Even if ethyl bromid should prove to be more dangerous than ether, the incomparably shorter duration of anesthesia would outweigh the apparently greater security of etherization. It is a question which must be decided by many thousands of clinical experiments, as it were. The opposing views have been presented impartially, without allowing my gratitude for the time and trouble saved by the use of this anesthetic to blind my judgment. The manifold and obvious advantages of this mode of operation will, I may trust, recommend it to many as well worthy of extended trial.

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THE IMPROPER USE IN MEDICAL LITERATURE OF CERTAIN WORDS AND PHRASES.

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In one of his published letters, Oliver Wendell Holmes writes: "I've sometimes made new words. In 'Elsie Venner' I made the word chrysocracy, thinking it would take its place—but it didn't; plutocracy, meaning the same thing, was adopted instead. Oddly enough I had a letter from a man to-day asking if I did not make the word anesthesia, which I certainly did."

The life history of words and expressions, medical terms included—how they came to be used at all—how some of them, after enjoying a period of prosperity, even of aristocratic connection, sank into obscurity—how some of them were resuscitated and afterwards became a part of the speech of every-day life—how certain candidates for favor were rejected while others were taken up, fêted, caressed, and finally became immortalized in the common dictionary of the language—all this forms a story of the greatest interest. It may also be pointed out that words endure on account of some quality inherent in themselves or because of their peculiar environment or in virtue of both. A medical term survives when there is a great need for it and when its form is pleasing to the literary sense (if one may use that phrase) of the community.

There is quite a large number of medical terms knocking for admission into the fold of our scientific vocabulary, either as entirely new forms or as later and better representatives of old ideas. What proportion of these will be adopted into the growing family of medical terms remains to be seen. Meantime their employment is entirely unauthorized.

The following sentences contain examples of the improper use, in this sense, of certain words that occur occasionally in our medical journals. The objectionable words are italicized: (*a*). On the next day we *operated* the child. (*b*). Care should be taken not to *operate* the cataract too soon. (*c*). If the *operated* eye remains quiet it is better to interfere early. (*d*). These symptoms may be due to a swollen *turbinate*. (*e*). The *iritic* reflexes were found to be normal. (*f*). If we wish to measure the total ametropia, it is usually necessary to employ a *mydriatic* (cycloplegic). (*g*). It is often difficult to *refract* such a patient. (*h*). In cases where the *refracted* eye is shown to be emmetropic (*i*) the *refractor* places a convex lens before his own eye.

(*a*), (*b*), (*c*), In Vicente Salva's Spanish-Spanish-Latin dictionary, the nearest approach to a Latin equivalent of the Spanish word *operar, to operate upon*, is given as *operationem chirurgicam peragere*. The English language has in this particular followed the Latin construction more closely than the so-called Latin languages themselves. There is no single transitive verb (derived from *opus*) in either tongue

that conveys the idea of the performance of a surgical operation. If there be such it will be found in the works of modern writers of Latin who, under German, French, Italian or Spanish influence, have coined a corrupted derivative (*operare*) from the deponent verb *operari*, which has quite a different significance from *operar*, *opérer*, *operare* (Italian) and *opereiren*, which are, in a perfectly legitimate sense, transitive. It is probable that the above mentioned and objectionable use of the English verb may be traced to the same source. This probability will be brought out by the following short sentences and phrases taken at random from foreign publications: *Ich habe das operirte Auge sehr oft untersucht. Einen Blinden, die Augen, den Staar u. s. w. operieren. Ce chirurgien est habile, il opère parfaitement bien; il a opéré dans la journee deux hommes qui avait la pierre. Il primo a operare con successo l'estirpazione della laringe fu un italiano.* So that while the continental surgeon we are best acquainted with usually *operates* his patients or their organs, *we* must continue to operate *on* or *upon* them.

(*d*). This word is never used as a noun, although there is abundant authority for the employment of *turbinal*—meaning a turbinated bone. For example, in Huxley's "Anatomy of the Vertebrates" occurs the following: "Forming the floor of the front part of the nasal chamber on each side is a large concavo-convex bone . . . which is commonly termed a *turbinal* . . . does not truly correspond with the *turbinals* of the higher vertebrata." This pretty well disposes of the argument (in favor of "turbinate") that we have no single word in English to designate a turbinated bone.

(*e*). A moment's consideration of the fact that the adjective *iritic*, like *neuritic* and *pleuritic*, has to do with the inflammation of the part designated by the first portion of the word should be sufficient to prevent the mistake of using it to refer to the part itself. On the other hand, this improper use of *iritic* is not uncommon; I have lately seen it so employed in one of our most widely known medical journals. Legitimate adjectives (derived from *iris*, gen: *iridis*) are numerous enough; there is good authority for *iridal*, *irian* and *iridian*, not to mention the frequent and proper use of the noun *iris*, as an adjective.

(*f*). The use of *cycloplegia* and *mydriasis* as synonymous terms and of *mydriatic* and *cycloplegic* as interchangeable adjectives and adjective-nouns is one of the commonest errors one meets with in medical literature. A mydriatic may be, but is not necessarily, a cycloplegic, even though a cycloplegic is usually a mydriatic. A giant is always a man, but men are not necessarily giants. The electric current and a quarter-grain solution of cocain are under certain conditions mydriatics but neither of them is a cycloplegic. If one wishes to refer specifically to the dilatation of the pupil the ancient term *mydriasis* should be employed, reserving the modern word cycloplegia (from κυκλος, a circle, *i.e.*, the ciliary ring, and πληγη, a stroke) for indicating a paralysis of the ciliary muscle.

(*g*), (*h*), (*i*). It is not uncommon to witness the incorrect employment of these words, even by those who make some pretensions to scientific accuracy. If we think of their etymology (or consult any dictionary) it will not be difficult to show the inaccuracy of connecting the idea of personality with any of them. One may properly *measure* or *determine* the refraction of a patient's eye,—but ought not to say: "I advise you to refract Mr. Jones," or "You had better refract both his eyes," which would be tantamount to condemning Mr. Jones or his eyes to be broken up or bent back (*re* and *frangere*). In the same way the noun, *refractor*, has been incorrectly given a new meaning—that of a person who determines the refraction of the ocular media, *vulgo*, a man who fits glasses. One meaning of *refractor* is that of a telescope and the idea is of something that refracts, or bends from their course, light or sound waves.

Although it is undoubtedly true that we can not with propriety speak of *refractor*, *refract* and *refraction* apart from a *thing*, yet it can not be denied that the phrases, "to measure Mr. Jones' refraction," and "to determine the refractive condition of Mr. Jones' eyes," are entirely too clumsy and eat up too much time. Already, in England especially, the shorter expression "to measure Mr. Jones" (for glasses) is in vogue. In practice this would be less objectionable (to Mr. Jones himself and others) than "to refract Mr. Jones," who might be hard to bend or break.

There is a demand, but less urgent, for some term that will designate the person doing the refraction work above referred to, but that "refractor" meets this philological want is at least doubtful.

Many other examples of the questionable use and application of terms in medicine might be given, but such a task may well be undertaken by some other writer better qualified to complete it.

SCARLATINA AND THE STREPTOCOCCUS INFECTION.

Read in the Section on Diseases of Children at the Forty-fifth Annual Meeting of the American Medical Association, held at San Francisco, June 5-8, 1894.

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The clinical history and symptomatology of scarlatina point to a virulent infection. Streptococci are found in the throat, cervical glands and other lymphoid structures, as well as in the blood, pleural, pericardial and peritoneal secretions, internal organs and skin of patients succumbing to this dread disease.

Mr. Bergé, in a paper read at a recent meeting of the Biological Society of Paris, maintains that scarlet fever is the result of a local infection by the streptococcus. In an article upon "The Local Lesion of Scarlet Fever," Dowson speaks of the "accidental inoculation of the tonsil by minute scratches while taking food."

No one questions the common etiology of idiopathic and surgical scarlatina. Their relation to puerperal fever and pelvic suppuration is admitted. Consequently their affinity to any local abscess formation, septicemia or pyemia must be conceded. No clinician has failed to observe the likeness of the course and progress of an attack of scarlet fever to one of septicemia or even pyemia. Post-mortem records emphatically corroborate this characteristic and harmonize the seeming conflicting facts with the specific microbic distinctions and diversities. With reference to the latter and the progressive changes in the biologic field, Hueppe says: "For a better enlightenment, and under the influence of a

strictly scientific apprehension of the etiologic problem, these rugged differences are disappearing." In the effort to determine the cause of such apparently diverse conditions as erysipelas, scarlatina, septicemia or suppuration, the specificity of the streptococcus erysipelatis, the streptococcus scarlatina, the streptococcus pyogenes may have been too markedly dwelt upon and their almost biologic indistinguishability overshadowed. Osler believes "the rash of puerperal fever and of surgical scarlatina to be the red rash of septicemia." To me, it seems reasonable to push this thought to its logical conclusion, viz., to call the red rash of *idiopathic* scarlatina a septicemic eruption. Such complications as endocarditis, arthritis, etc., are doubtless pyemic, and possibly indicative of but a more malignant and extensive scarlatinal incursion.

Fraenkel, Baumgarten and lately Knorr are avowed advocates of the identity of the streptococcus erysipelatis and the streptococcus pyogenes. In 1889 Fraenkel by erysipelas culture inoculations, caused purulent ophthalmia in one case, peritonitis in another and an abscess of the skin of the back in a third case. This proved to his mind "the identity of the two," while "clinical differences in the disease were due to the mode and locality of the infection; perhaps also to the quantity of the virus and disposition of the individual." The identity of the scarlatinal and pus germ is as yet undetermined, although by many, they and the streptococcus erysipelatis are considered as different varieties of one and the same species. It yet remains to bring this theoretical work into consonance with practical clinical experience.

Spatswood in a recent article entitled "Infant, 1 Month old with Erysipelas of Head, Face, Neck, Trunk and Extremities," traces the infection to the mother, who four days after delivery came down with puerperal fever. Dowson reports a case of scarlet rash superimposed upon an otorrhea. Gimmel reports two adult cases of erysipelas developing upon a previous scarlatinal attack. In the one case, scarlatinal desquamation took place on the sixth day and upon the tenth day was followed by a localized facial erysipelas exfoliation. He is of opinion that "the scarlatinal poison may often have, just as in erysipelas, its point of entrance in an epidermal injury." . . . "It is a question with me, whether or not in these cases the etiology of the two processes was not identical; for the erysipelas occurred during the desquamative stage of scarlatina and the contagion carried to a nasal excoriation by the desquamating skin."

As early as 1840, Braun calls attention to the fact of many contemporaneous attacks of angina and facial erysipelas. A scarlet fever case of Gläser's in whom great flakes of desquamating skin exposed the deeper, oozing, rete malpighii suggests to me the possibility of this disease invasion through the skin as well as through the usually accredited portal, viz., the tonsils.

In the *Archives of Pediatrics*, April, 1893, I reported a case of erysipelas, contracted by the father through the scratch of his child's fingers, the child at the time being sick with scarlet fever.

In February, 1894, I was called to see a boy suffering from severe scarlatina which prevailed in his neighborhood. There was an enormously large bilateral cervical adenitis. The matter was deeply seated and caused some respiratory embarrassment. The patient was in a dangerously septic state, much enhanced by a superadded right facial erysipelas. The surface was swollen, brawny, glazed and involved the eye and neck of that side. Unfortunately, I had no further opportunity for observation of this interesting case. But I was again profoundly impressed with the probable identity, or at least possible interchangeability of the pyogenic, erysipelatous and scarlatinal microörganisms and their correlative aggression.

Jordan, in the *Centralblatt fur Bakt.*, 1891–92, concludes that: "Erysipelas is etiologically not a specific disease." He is criticised for "so many conclusions on so few cases." I must plead guilty to the same indictment, but because of the importance and interest of my theme, present it for consideration. The etiologic and clinical parallelism of scarlatina, septicemia and erysipelas having been presented, their points of non-resemblance, variable intensity, individual susceptibility to, or immunity from, must be explained. Their diverse manifestations need interpretation; for in the one instance an abscess or septicemia obtains, in another, erysipelas, and again in a third case scarlet fever.

Varying virulence is probably dependent upon the life history of the germ, its different avenues of entrance and the natural and acquired immunity of the invaded organism. The character of the disease may likewise depend upon the vulnerability of the individual; some responsibility being attached to age, heredity, congenital disease, anatomico-physiologic conditions peculiar to age and personal environment.

An infectious agent is often innocuous to a healthy individual, illustrated by the presence of Löffler's bacillus in the throat of healthy persons. Diphtheria and scarlet fever are preëminently dangerous diseases of childhood. Why? Not alone do adenoid tissues, especially accessible to bacterial encroachment, prevail in youth, but this period of life has anatomic structure of fauces, larynx and skin peculiar to it. Again, a great majority of the child world are born with a rachitic, tubercular or syphilitic taint. They are subjects of a lymphatic diathesis, particularly prone to the streptococcic onslaught. In childhood, mucous membranes and skin are to some extent unripe and tender, and their peripheral layers easily succumb to the deleterious effects of implanted microbes. Large assailable epidermic surfaces are perhaps exposed to a diffuse and overwhelming incidence. Scarlet fever results; its mildness or severity gauged by the quantity, virility, extent and penetration of the overpowering force and the age, health or disease of the besieged organs and tissues. The sheltering care and environment of childhood ordinarily prevents the grosser lesions necessary to the inception of erysipelas and ordinary wound septicemia; adult exposure diseases. Environment is here a great factor. The horny, mature, epidermal layer also withstands, consequently localizes, the streptococcic irruption. Erysipelas results; the graver, the larger the implicated surface. Grosser injuries and inundation of the blood by the streptococcus determines a septicemia. A lymphatic streptococcic incursion, a final connective tissue space involvement, determines abscess formation. Idiopathic erysipelas has disappeared from the nomenclature. Idiopathic scarlatina will eventually meet a similar fate for the same reason. The association of surgical scarlatina and puerperal fever are regarded as modified scarlet fever. Erysipelas may in the future be considered an analogous variation, due to differ-

ing essential character and inherent quality of tissue attacked.

As anthrax displays three forms of disease consequent upon the entry of the bacillus into different regions of the body; so might the streptococcus give rise to diverse manifestations according to its mode of entry through the adenoid, mucous, serous, epidermal tissues or blood. When we consider that the incidence of scarlet fever is only 5 per cent. it does not compare unfavorably with that of erysipelas and septicemia over which such a cry of susceptibility and immunity is not raised. Heredity, perfect health and fully developed structure may account for natural scarlatinal immunity. A previous attack or a protective blood serum inoculation, as demonstrated by Ashmead, produces artificial or acquired immunity. However, positive scarlatinal immunity can not be sustained in the face of accredited cases of second independent attacks.

The subject of immunization will be nearer solution with the development of the toxin and blood serum therapy questions. Thus future therapeusis will be directed into: 1, the antiseptic; 2, the antitoxic lines.

Before closing, I wish to place myself upon record as strenuously opposed to the use of inunctions in scarlatina; for I have long believed that the diseased skin and secondarily the kidneys, by reason of an oily lacquer are made to carry an additional burden. Arnheim, Unna, and recently Ssokelow, have proved that in scarlet fever the respiratory and secretory function of the skin is seriously involved; consequently inunctions but aggravate this condition and cause secondary nephritic complications. In the face of this evidence, warm antiseptic baths had better supersede so dangerous a procedure, thus promoting physiologic function and meeting anti-bacterial indications. Through biologic research we again see surgical cleanliness invading the domain of medicine. To sum up:

1. A specific scarlet fever germ or toxin is not yet demonstrated.

2. The disease is associated with a streptococcus infection.

3. A streptococcus admitted to be the cause of surgical scarlatina and puerperal fever.

4. A streptococcus admitted to be the cause of erysipelas.

5. The frequent association of the latter with puerperal fever and it in turn with surgical scarlatina.

6. The relation of idiopathic scarlatina to surgical scarlatina and puerperal fever acknowledged.

7. The identity of the streptococcus pyogenes and erysipelatis advocated.

8. Clinical records showing the association of suppuration, erysipelas and scarlatina in one and the same subjects, suggestive of the parallelism of these three infections and the probable biologic identity of these several streptococci.

9. Clinical differences and varying susceptibility to the one or the other due to heredity, age, anatomico-physiologic conditions, congenital disease, environment, life history of the invading host and its avenues of entry.

10. Disappearance of idiopathic erysipelas from the nomenclature. Analogously, idiopathic scarlatina may meet a like fate.

11. Natural immunity due to heredity and healthy fully developed structure.

12. Acquired immunity from antitoxins of the disease or through blood serum therapy that will revolutionize the treatment of this dread disease.

13. Inunctions disapproved of. Antiseptic baths better meeting anti-bacterial and physiologic indications.

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THE VAGINAL DOUCHE IN ITS RELATIONS TO BLENNORRHEA IN THE FEMALE.

Read before the Louisville Academy of Medicine, Feb. 18, 1895.

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To be concise, to avoid irrelevancy, to be up to date, to be orthodox, is the aim of this paper.

What is blennorrhea or gonorrhea, as you may please to call it? The following quotations from Fin-

ger[1] embody my answer of this question and will be the basis of my argument:

"So many positive inoculations have been made that doubt of the pathogenic character of the gonococci is hardly possible at the present time; in fact its etiologic significance is not recognized universally except by a small group of French writers."

Further on, after viewing the full history of laboratory research in this matter he says: "If we make a résumé, the following facts may be regarded as well established:

"1. The gonococcus is found in all cases of suppuration of the mucous membranes, especially of the genitalia and conjunctiva which are described clinically as gonorrheal.

"2. It is absent in all non-gonorrheal processes.

"3. Pus free from gonococci does not produce gonorrhea.

"4. Pus containing gonococci produces gonorrhea.

"5. The microörganisms which are cultivated from gonorrheal pus, but which are not identical with the gonococcus do not produce gonorrhea.

"6. The gonococcus cultivated from gonorrheal pus produces gonorrhea with distinct increase of the inoculated microörganisms."

In the comparatively modern literature of gonorrhea that has, in its full fruition led up to the evolution of the laparotomist and his hospital, Van Buren stands undeniably first. It is now quite thirty years since he wrote: "More people die of clap than do of syphilis." Like most prophetic warnings his statement was long ignored and unappreciated. Ten years later, Noeggerath "wrote himself down an ass" in his paper on "Latent Gonorrhea and Its Influence on Fertility in Women." The story is a long one and instructive as well. Nothing but the *pudor*, the false shame that surrounds it, has kept it from resounding through the columns of almost every phase of literature.

Noeggerath's second pronunciamento came in 1876, yet as late as 1884, Milton, the most voluminous writers on gonorrhea of ten years ago, refers to specific endocervicitis, endometritis and ovaritis as *complications* of an original specific vaginitis. Finger (*op. cit.*) says: "I still remember when it was impossible for me to demonstrate a trace of blennorrhagia on examining a woman from whom a man was proved to have acquired acute gonorrhea. Not alone could the diagnosis not be made in many cases, but the severity of the process in women was not recognized. The knowledge of the process was confined to the recognition of vaginitis, vulvitis, abscess of Bartholin's glands and urethritis. The latter was regarded as very rare (5 per cent of all blennorrhagic females—Zuisl). Very bold syphilologists ventured to speak of an 'endometritis cervicalis blennorhagica.'"

In 1874, Bumm first called attention to the cervical canal as the frequent site of gonorrhea; and although the gonococcus of Neisser was demonstrated in 1879, it was not until 1891 that Kratter insisted on the microscopic examinations of secretions and curettements before making a positive diagnosis.

Currier ("Morrow's System," 1893), while questioning somewhat the absolute relationship in the matter of cause and effect between the coccus of Neisser and gonorrhea, rates himself a specificist in saying: "Gonorrhea in a woman always implies a precedent gonorrhea in some one else . . . it never exists *de novo* either in man or woman."

I am indebted to the article by Currier just referred to for much of the following history. He says: "In recent times it has been seriously questioned by more than one thoughtful writer, whether gonorrhea of the vagina ever exists as a primary condition."

Bumm, in 1891, after a study of fifty-three cases of gonorrhea in the female, found that the cervical endometrium was the seat of gonorrhea in 75 per cent. of the cases, the corporeal endometrium in 15 per cent., and the tubes in 3.5 per cent. "Formerly," said he, "I questioned the existence of vaginal gonorrhea in adults; now I believe it seldom occurs in adults as an acute process and *never as a chronic one.*"

Sänger finds gonorrhea most frequent in the cervical endometrium. He holds that while the vagina necessarily receives this discharge it is not always influenced by it.

Sternschneider finds the urethra the most frequent site of acute, and the cervical endometrium of chronic gonorrhea in the female.

Eraud demonstrates the frequency of cervical gonorrhea by curettement. In common with other observers, he believes that the exemption of the vaginal mucous membrane from the disease is due to the character of its epithelium (pavement) which is not favorable to the growth of the gonococci. He holds that gonococci found in vaginal secretions are migratory.

Horand gives some interesting statistics in that they contrast in this matter, childhood and adult life. He states that in eighty-five female children with gonorrhea he found vaginitis in sixty-eight. In twenty of these the vagina alone was infected.

Currier aptly refers to the structural difference between the vagina of children and of adults as an explanation of this. In the very young the vaginæ are lined with an exceedingly soft, delicate epithelium and are or should be unused and almost sealed passages, while in the adult, with her descended womb and recurring menstruous flow to say nothing of other influences, ablutions, etc., the resistant pavement protective speedily hardens and with the many benign and septic germs that innocently find lodgment there, some quite probably inimical to the coccus of Neisser, it is not at all a matter of wonderment that her vagina is almost absolutely proof against the disease.

To summarize: Gonorrhea in the female is ordinarily anything but a vaginitis. It attacks the vulva and its appendages, the urethra, the uterus and even the tubes and ovaries, sometimes, notably in children and young girls, the vagina. But in such cases it is always of an acute and so temporary type; a type which because of its necessarily concomitant symptoms is not conducive to contagion. Need I enlarge upon the inferences to be drawn from this array of facts? That the vaginal douche if used as a curative agent for a presumed specific vaginitis, is useless must be apparent to all, and in the light of modern science the *strong* zinc or alum for the woman, as a parallel of the *weak* zinc or alum for the man, is a thing of the past. So, too, of boric and bichlorid and permanganate and all of the growing family of curative specifics, all are futile in vaginal douching. Yet the douche has its place and wisely used this is unquestionably a place of the highest importance.

[1] Blennorrhea of the Sexual Organs, by Dr. Ernest Finger; translation, third edition. Wm. Wood & Co. 1894.

What is it? First, it is a prophylactic agent. We recognize how feeble the hope of prevention is, where a lacerated surface receives friction in the sexual act, with a chancre. But not so with the gonorrheal virus. Here the prompt douchment with a fountain syringe, hot water, and, say a dash of vinegar may be productive of great good. Here is rational hope of escape from infection, and with statistics demonstrating the cervical canal to be the commonest site of infection, I would in the abstract say that a thorough hot douchment of the vagina, the subject recumbent, in every case where risk is incurred, would in its results alone justify the retention of the vaginal douche in genito-urinary practice. Beyond this it has, as a rule, two purposes in gonorrhea and two only: 1, for cleansing and disinfection, with, say, carbolic acid or some other of the creasols, or with simply warm water, non-curative but of much worth; and, 2, its use as a means of applying the soothing influences of moist heat to those inflamed and sensitive organs, the uterus and its appendages. Here it may be undoubtedly made fruitful of much good; yet here unless it be desired in its use to at the same time wash from the vagina the migratory virus, I would suggest that much greater benefit will accrue if the vaginal douche be given *in the rectum*.

DISCUSSION.

Dr. L. S. McMurtry—The paper read by Dr. Palmer is too valuable a one to be allowed to pass without discussion. It is a clear cut syllabus of facts from beginning to end, and I indorse it thoroughly. Van Buren's statement was indorsed by Lawson Tait in his great work, and in all probability Lawson Tait never saw Van Buren's writings. The statement referred to was that of the two diseases, gonorrhea was much more severe and dangerous to life than syphilis, and in late years the profession had recognized this. As the gonococcus finds a nidus in the cervical canal, the vaginal douche as a curative measure is useless, the specific virus being lodged where it can not be reached. After the acute symptoms have passed little is heard of it as a chronic malady; it is in the tubes; a gonorrheal salpingitis develops, the pus leaks out in cavity, peritonitis increases and it is the severe general symptoms which bring the patient to look for advice and treatment. It is true, radical measures can cure, but if only the lower mucous membrane is affected the patient is not invalided and the physician is rarely consulted.

Dr. W. H. Wathen fully indorsed the conclusions of Dr. Palmer's paper, and was impressed by the statement that the vaginal mucous membrane is seldom involved in gonorrhea. He had frequently examined patients with gonorrheal discharges and frequent micturition, and from a microscopic view there was no change in the vaginal mucous membrane, and this must be accounted for by the resistance this membrane has for the gonococcus. He does not know what position to take in regard to douches in specific vaginitis. Hot water is as good as any antiseptic; patients are benefited by frequent hot douches, and patients thus treated have not developed pus tubes. If the gonococcus has invaded the cervix and uterus in acute cases, it is only the superfices; it should be curetted and washed with a 1 to 5,000 bichlorid solution, and tamponed with iodoform gauze. Gonorrhea is not so frequently the cause of pus tubes as was formerly believed, but it is oftentimes the cause, especially in young married women who have married men who thought themselves cured of a gonorrhea. Now can any one tell what percentage of involvement of the vagina, uterus and tubes has been due to the gonococcus? The pus tubes removed, if no gonococcus is found does not indicate that it was not there; the gonococcus is a sensitive bacteria. In the large chronic pus tubes no gonococci are found. The older and larger the tube the less virulent the pus.

Dr. Dugan said that the absence of the gonococci from the pus in tubes is an evidence that the pus is not due to this organism. Scraping of the endometrium is not effectual, because the gonococcus is not satisfied with the surface, but dips down. The primary lesion is a stricture analogous to the stricture of the urethra in the male. The septic bacteria or those of suppuration are associated with the gonococcus the drainage is interfered with on account of the stricture and an abscess results, formed by the bacteria of suppuration.

Dr. Frank stated that Dr. Palmer had explained why the vagina is not affected by the gonococcus. Gonorrhea does not exist in pavement epithelium surfaces, and in all cases in which there exists gonorrhea with a discharge it comes from the uterus or cervix. A vaginal douche is of no avail as a curative measure, but it may give some relief. Dr. Dugan has explained why the gonococcus is not found in the pus of pyosalpinx. The gonococcus invades the deeper structures; it is found in the tissues on section. He had demonstrated in one case in which there was from one to one and a half ounces of pus in a pyosalpinx, the presence of gonococcus. Treatment of gonorrhea should not be by the douche but by applications to the uterine mucous membrane, curetting and drainage, taking away the mucous and some of the glandular structure. This may not prove effectual, as these glands dip deep down in the muscular coat, and to have regeneration of tissue some of it must be left. The gonorrhea may travel by means of the lymphatics. The paper read by Dr. Palmer is interesting and timely.

Dr. J. B. Bullitt complained that this most excellent paper read by Dr. Palmer had left us in rather a hopeless state, as he had offered no treatment to take the place of the vaginal douche, which even now many believed to be the only treatment, and he knew that all would be obliged for a treatment to be advised.

Dr. McMurtry asked if gonorrhea in male or female ever got well spontaneously.

Dr. Palmer answered that nine women in ten never get well and a large percentage of men do not. Almost all of the speakers had approached the subject from a different standpoint than he had treated. He rather looked to the possibility of the disease being transmitted to men, and they, in turn carrying it to the marital couch. The pus in the pus tubes is different from the pus in the urethra; the gonococcus is a dainty organism, not content even with the urethra, for a drop of serum obtained from the former five days after the development of the disease has been found to contain the gonococcus. Of all organisms the gonococcus is a burrower, and all authorities show that it is want of care and persistence on the part of the examiner which causes him to fail to find the gonococcus. He had under his care at present a girl 14 years of age who had never menstruated, but why had a profuse gonorrhea in the discharge of which the gonococci had been found by Gram's method.

The left vulvo-vaginal gland was involved, there was vaginitis, vulvo-vaginitis and vulvitis. Bichlorid 1 to 2000 douche had been used for one week, and at the end of that time, after cleansing thoroughly he could not touch the uterus with his very long finger. A virginal speculum was introduced and the entire vagina was as raw as any raw meat he had ever seen, the cervix could not be found, and the conclusion was arrived at that the patient had a virginal uterus which had not descended from the abdominal cavity. This case was cited to show the difference between an adult female with gonorrhea and a child; in the latter there occurred a vaginitis. Nine out of ten men contract gonorrhea from women who have this disease in the subacute or chronic stage. If in the acute stage they could not receive the male organ on account of the pain. In acute gonorrhea of the female there is no sign, unless there be a urethritis or vulvitis, until the cervix is reached; cleanse the vagina and you see nothing indicative of inflammation but a tender cervix, and a flow of pus from the canal. The gonococci may remain here for fifteen or twenty years. In the case of the girl with gonorrhea, fully one ounce of pus was mopped out, this alone showing the inefficiency of the douche, which had first been given thoroughly. In the treatment of adult females, in a suspected case it is better to use a powerful chemic agent rather than the knife or curette. Churchill's tincture of iodin is good; this should be carried up and allowed to lie there, asking the patient to possess herself with patience, perhaps making two or three applications at one sitting. The douche is good for cleansing purposes. The cervical canal is the seat of gonorrhea in 75 per cent. of all cases, the vagina is never the seat of chronic gonorrhea. The gonococcus lets the vagina alone. Rather send the water up into the rectum, and by its proximity let it bathe the ovaries, and obtain a soothing action against the inflamed parts. The subject, as before stated, should be looked at from the standpoint of the general public rather than the surgeon's chasing after pus tubes. In conclusion, he would state that when gonorrhea is treated in the female do not treat the vagina, but the cervix; the vaginal douche is absolutely useless as a cura-

tive measure. He has the record of one case of gonorrhea of the mouth, but the mouth with its seventeen different kinds of bacteria is practically proof against the infection by the gonococcus. It is the exceptions which prove the rule. Introduce the speculum, cleanse the vagina well, disinfect the exposed surfaces, in old cases curette the cervix, then apply the medication; but if the cervix is lacerated use nitrate of silver and burn thoroughly. Introduce an antiseptic tampon to absorb the discharges, which should be withdrawn at the office, and always treat the cervical canal instead of the vagina.

The youngest case of gonorrhea which Dr. Palmer had seen was 3 years of age. Twelve years ago a man gave his pregnant wife gonorrhea, the child was born and developed a gonorrheal ophthalmia. The grandmother went blind from gonorrheal ophthalmia developed from the child, and two sisters, 3 and 5 years old developed gonorrheal vaginitis from the same case.

A CASE OF HYPERTROPHY OF MAMMARY GLANDS.

COMBINED WEIGHT FIFTY-TWO POUNDS—EXCISION—RECOVERY.

BY JOHN B. HAMILTON, M.D.
CHICAGO.

July 19, 1894, Mrs. P., of Lancaster, Wis., was brought to the Presbyterian Hospital by her physician, Dr. F. E. Strong, of Lancaster, who gave me the following history:

"Mrs. P., age 32, had ordinarily good health up to the time of her marriage eight years ago. Began to menstruate at usual time. At 12 years of age had scarlet fever, and when 16 began to have slight irregular pains in both mammary glands. During her first pregnancy when six months advanced, the breasts began to enlarge and became painful. At this time she was very sick with malarial fever and remained so until eight months, when twins were born. Two weeks afterward breasts had resumed their natural size. During second pregnancy they began to enlarge at second month, but did not attain their former size. The child was born at term and nursed from the nipple, which the first did not do. In fall of 1893, just before her third pregnancy, the breasts began to enlarge a third time. She grew weak and an abortion followed at five months; the breasts did not diminish in size, but increased until she came to the hospital. The right breast measured forty-two inches in circumference at the nipple and the left thirty-nine. The right breast measured thirty inches around the pedicle and the left twenty-seven. The right breast measured fourteen inches from the nipple to the pedicle, and the left thirteen and one-half. She was unable to walk without assistance owing to the great weight and bulk of the breasts. The drawings herewith from a photograph, show the appearance of the breasts.

The enormously enlarged veins, the great size of the tumor and the history of former cases, made operation an object of some solicitude on account of the danger of hemorrhage. The first operation was done in the clinical amphitheater of Rush Medical College, July 21, 1894. I had a couple of long skewer pins made and thrust them through the pedicle. I then cast a stout rubber cord between the pins and the chest, and drew them tightly but separately from each side. The breast was then removed by cutting two flaps of skin from the tumor, reflecting them respectively upward and downward, and enucleating the gland; the vessels were secured without difficulty. The hemorrhage was considerable, but it was almost entirely from the blood remaining in the gland, as the constriction had prevented arterial hemorrhage. The great bulk of the gland prevented the emptying of the blood vessels by compression, although something was done in that direction by elevating the breast while the patient was in recumbent position. The measurement after removal was thirty-nine and one-half inches in circumference, from nipple to pedicle fourteen inches, and around pedicle thirty inches. Its weight was twenty-seven and one-half pounds. On section, the tissues were a grayish-white color, normal in structure.

Dr. F. W. Miller, Interne at the Presbyterian Hospital, made the microscopic examination, and the following report:

"The histologic elements may be considered under two headings, viz.:

"1. Parenchyma elements which are seen as acini and ducts, sometimes greatly compressed so as not to be easily distinguishable. In some the epithelial lining is distinctly columnar, and the lumen of the duct oblong, or large and spherical; in others the epithelial lining, consisting of two layers is made up of small pavement epithelial cells.

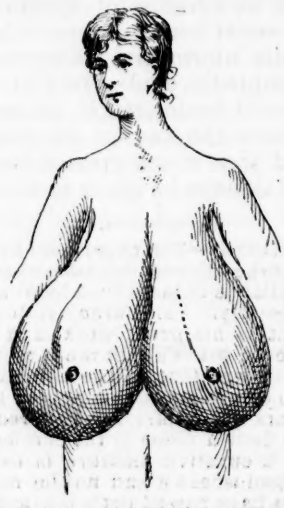

FIG. 1.—Hypertrophy of Mammary Glands. Hamilton's case, 1894.

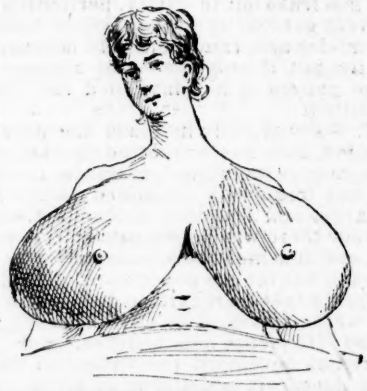

FIG. 2.—Hypertrophy of Mammary Glands. Hamilton's case, 1894.

"2. The connective tissue elements are in excess of the normal proportion, and consist of highly refractile non-nucleated fiber bundles, taking deep stain with eosin; these fibers interlace in all directions; fat cells are abundant but vessels lacking. Diagnosis: hypertrophy of mammary glands."

There was considerable shock; the patient was well stimulated, external heat applied and the foot

of the bed elevated; she rallied and the wound healed by primary union. On August 11, the wound having healed and the patient being in good condition, the left breast was similarly removed in my clinic at Rush Medical College. The breast had slightly increased in size, contrary to the statement sometimes made that when one breast is removed the other diminishes in size. The operation was attended by no unusual incident and recovery was prompt.

This diffuse form of hypertrophy of the mammary gland is extremely rare. Williams[1] states that "while 2,422 cases of mammary neoplasms came consecutively under treatment at Middlesex, University College, Bartholomew's and St. Thomas Hospitals, during a period of from sixteen to twenty-one years, only six cases of diffuse hypertrophy were seen in the same period." The same author has collected notes of amputations done on sixteen patients, and only one death. "This patient died twenty-two hours after the operation from collapse from excessive hemorrhage during the proceeding."

M. Pierre Delbet[2] says: "Known since the time of Galen, hypertrophy of the breasts is very rare. Velpeau did not observe more than five cases; in 1880 Billroth esteemed it a privilege to have encountered two examples; Labarraque, the author of altogether the best work on this subject, was not able to collect more than thirty-three observations, to which it is necessary to add the more recent cases of Benoit and Monteils (1877), of Monod (1881), Klippel (1887), Billroth (two cases), Barton, Richter, Schussler and Lihotsky."

In conclusion, it is to be mentioned that true hypertrophy (uncomplicated) is usually double, while the cases of hypertrophy of the male breast, described by Leudet (1886) and Blomfield (1886) as an occasional complication of phthisis pulmonalis were unilateral.

"THE RELATIONS OF MATTER AND MIND."

BY R. E. HAUGHTON, A.D., M.D.

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REVIEW.

In reading the article with the above title to its close, I find in the last paragraph this remarkable statement in the form of an interrogatory, viz.: "Do not these converging testimonies focus the truth in the proposition, that the somatic mind of man is (clearly enough) the highest manifestation and legitimate sequence of the primal law of *matter* and *motion* expressed by the Creator in the beginning on the elements of the earth?" The author of this paper paper said in his Presidential address before the AMERICAN MEDICAL ASSOCIATION: "The progress in medicine in the immediate future must be along biologic lines." So in accentuating this thought, I accept the position assumed as to the progress in medicine, but do not accept the final conclusion arrived at in the quotation in the paragraph alluded to. It is to my mind the enunciation of the exploded idea of evolution, from lower to higher forms, and also involves the doctrine of the "survival of the fittest." It also from the standpoint of investigation ignores the fact of creative design and power in the beginning, in the realm of both matter and mind. It is stated as a proposition by Sterling: "That all organisms consist of the same life matter, which life matter is, for its part due to chemistry, must be pronounced untenable, nor less untenable the materialism founded upon it." The materialism in such a statement is seen when we strip the verbiage from the proposition and present it thus, viz.: That the mind of man is clearly enough the highest manifestation and legitimate sequence of the primal law of matter and motion upon the elements of earth. Motion and matter in their interaction upon each other produce mind. I think it is accepted as true that "like causes produce like results," and that no creature has been produced since the first dawn of creation without sufficient cause.

The opinion that life is a mode or form of energy is one which is gaining an increasing number of adherents among scientific men. Beale, "Protoplasm," page 102: "The idea that life exerts a power over matter—guiding or controlling its actions, having no relation to other forces," is an exploded one, and in this age of free thought and inquiry, ought to require no contradiction. If we follow the lines of the school men they are divided into two classes, viz., vitalists and materialists, and there have been these two classes upon every phase of medical doctrine, as well as upon every other question. Were we to give a more exact division or classification we should say men were divided into materialists and rationalists on the one hand and vitalists on the other.

THE CREATION OF MATTER.

Forces are the powers which are made to explain the phenomena of vitality. It must have been true that the same forces which give form to a cell as found in a living body, must have been operative when the "worlds were made." These latter belong to the inorganic universe in which there is some unseen power or force which confers life or vitality. True it is, one is microscopic and the others are macroscopic or telescopic, and yet of such vast and wondrous size that we are dumb with wonder and astonishment, and cast about in thought for the power which could create a system of worlds revolving around a common center with such harmony and exactitude. Does it not anticipate the thought which is said, "clearly enough, to be the highest manifestation of and legitimate sequence of the operation of the final law of matter and motion impressed by the Creator in the beginning on the elements of earth?" I am glad he confesses that there is a Creator and that there was a beginning for creation, and this admission stamps out much that is material and irrational in this statement under review. The great First Cause, least understood, is shadowed forth and comes at last upon the scene of the dawn of creation, walking in His majesty upon the wings of the wind, or manifesting Himself as the great I Am, when the rosy hues of the sun's living light first dawned upon the Creator's handiwork, and he said in tones of majesty and power: "Let there be light, and there was light." Why was there light? Because the Infinite and Creative mind had made the sun and hung it out in light and majesty and power, giving heat and warmth and

[1] A monograph on diseases of the breast, London, 1894, p. 82.
[2] Traité de Chirurgie par Duplay et Reclus, t. VI, Art. Mamelle, p. 130.

power to the entire cosmic scene. Which was first? The Creative mind and its fiat, or the worlds? By whose hand were they made, and "without which there was nothing made that was made." Here then we prove that mind, and it matters not as to the fact of the somatic mind of man or the Infinite mind, we thus prove that priority of existence belongs to mind, and that a Divine mind or Creative mind and if so, then according to the law laid down that "like begets like," and like causes produce like results, we have the fact of mind from mind, a Creative mind and a created mind again in the process of creation.

We are told "man was made from the dust of the earth," and God "breathed into his nostrils the breath of life and man became a living soul." Therefore, "when one attempts the analysis of the relation of matter and mind, by any study of it as it exists in the human adult one fails of success most signally." Because it is not given to men to comprehend infinite questions. How did man become a living soul? By a creative energy, and this is one of the forces of the material universe which has operated upon man ever since and before he had breathed into him the breath of life.

We shall not attempt a review of the processes of the school men in all ages to fathom the processes of human life, or indeed any other manifestation of life. Not even the "modern scientific methods of involved problems." Yet our former neighbor and confrére says: "We must devote ourselves to seeking the simplest form in which the relations of mind and matter exhibits itself and following its development, step by step in its ascending scale until it reaches its maximum in enlightened man." In this question as just stated, I would begin at the reverse end of the scale and passing from higher to lower forms would reach the ultimate limits of the scale in protoplasm conformed to cells, and their almost infinite multiplication as we study their relations in tissues, blood, etc., performing function in all its varieties and uses, with the same system, the same regularity, the same precision as is found to control the globes or cells of more immense and infinite perfections, in what is known as the planetary system. Here is law and order operating in control upon matter, thus revealing the Infinite Intelligence as well as the power which fashioned them by the operation of will, which is known to be the supreme faculty of mind in the inferior orders of creation, dominating the powers of mind as possessed in reason, judgment, affection, etc., so as to accomplish the highest happiness of the individual, when conformed to it.

IN THE BEGINNING.

Genesis is simply the beginning, and we are told that "in the beginning God created the heavens and the earth, and the earth was without form and void, and darkness was upon the face of the deep, and the Spirit of God moved upon the face of the waters and God said, Let there be light and there was light." Hence we find in these statements of the book of the beginning (Genesis) the cytogenesis, the morphology, the histology, the anatomy and the physiology of creation in its beginnings (whenever that was), and it does not matter whether it was chronologically 6,000 years, or whether it was according to some data of so-called geologic ages as expressed by Sir Charles Lyell, 35,000 or 50,000 years of our time. It is not so much a question of time as of mind and power or force in the higher planes of creation; the same law of design, power and creation runs through the entire series. In this historical but brief résumé, the relations of mind and matter are presented to the thoughtful and investigating individual who begins at the top of the scale to comprehend the author, and any attributes which such author may be supposed to possess, and as we must reason, we reason in two directions; from God himself as shown in his works, to his attributes, and when we fail in this direction to comprehend any attributes we look into our own, and thus rising from lower planes and mental characteristics we reach the law that "like produces its like," and thus in form and attribute, as the poet expresses it in his graphic description of man. He says: "In form and moving how express and admirable; in character how like a God." So, too, in the type and forms (cellular) in cytogenesis we see the same admirable and undeviating law that "like produces its like," except when some indefinable and inadvertent influence so operates as to divert the original type into some other form or type which is abnormal to the original type and is not or can not be found in any healthy or normal organism. This may be said to be heterogeneous formation and is the result of some rule or law of morbid production not known in the original type. For illustration: If we take any form of cancer and examine cellular forms we do not find the original type of structure, but some deviation of form and type which is known to us as cancerous formation, varying as the cell forms indicate, so that diagnosis and pathology go hand in hand.

GROWTH.

Growth of an organic body involves the question of nutrition, and "nutrition involves the conversion of lifeless pabulum into living germinal matter and comprises several successive steps." (Beale, "Protoplasm," page 102):

"1. The contact of the soluble pabulum with germinal matter.

"2. The separation of the elements of the nutrient substance from the state of combination as pabulum.

"3. The new rearrangement of the elements, and conversion of these into new germinal matter.

"Finally, nutrition, which means growth, is impossible unless living germinal matter be present, and in every case in which it is known to occur new germinal matter is produced." Hence nutrition is a vital process, a living process, and is positive evidence of vitality, and no approach to it has ever been accomplished in the chemic laboratory or in processes which are so-called chemico-vital, and no human ingenuity will ever be able to duplicate the vital relations of living organisms operating under some unchangeable vital force which exists or presides in and over the "germinal matter," which continues under the operation of this force to produce its like, and thus sustain growth upon one side and "metabolism" upon the other, as here are the two sides of life.

VITALITY.

Embodied in the term, "germinal matter," it is probable we find the secret of nature's arcana, and the life force is impressed upon it in some such way as the "Spirit of God moved upon the waters," and also when it was said: "Let there be light and there was light." Matter then had been created, and the operative and effective force which was directing the

changes upon the void of the great cosmos was the same intelligent mind and force which has directed the operations of the physical world ever since; no matter what the period of time may have been. So we establish a relation of mind and spirit with the material and spiritual of the universe in which and of which we are a part. It matters but little to the philosopher except he be an evolutionist, or to the scientific physician or scholar except he be a doubter, what particular changes he observes in the modes of mind and force if he but remember,

"One universal purpose through all the ages runs."

And thus on such a basis no cataclysmic results can be found in the realm of mind or matter. There are no results which are not worked out in harmony with divine law and purpose and no

"Eagle's eye or scent of prey,"

but is the result of adaptation and purpose, and hence the biologic result of cells in the construction of the eye and the nerves, with their acute sensibility. Like the bloodhound, which, amid all the traces of others than the one sought, will rapidly follow the right one, without mistake, to the end. Why is it so? First there is the original purpose in the germinal matter, and through cultivation and education the sense and faculty reached its ultimatum in astonishing acuity. So it may be said in the sphere of mind on its cultivation on one subject of thought or practice or another. One becomes a wonderful accountant, and can cast up several columns of figures, and yet can not explain how it is done. So, too, in the musical and poetical world, men and women reach marvelous power and compass in voice, and produce those wonderful instrumental accompaniments of voice, which hold you entranced and bewildered, yet it is by study and practice with the nerve and muscle, one controlling the other in the mechanical execution; yet were it not for the power of assimilation in the germinal cell and membrane, where were the art and practice of music, poetry and song? Where were the touches of Raphael?

CONCLUSION.

So we rise in the scale of being, and effort is God's method for this moral and spiritual progress, even up to the idea of a final salvation at the end of a probationary race, to enter into a higher and more spiritual realm which is seen by the eye of faith, "for eye hath not seen nor ear heard the things" nor hath it entered into the heart of man to conceive the things which God has in reservation for those who shall be assimilated to himself in such manner as is presented in the thought of the Bible: "The fatherhood of God and the sonship and brotherhood of the race." This is to my mind the highest evolution of the race, and such an one as he is controlling and directing, not only in this physical universe for man's benefit and development, but will continue it in the future progress and development of such as shall catch the divine purpose, "which through the ceaseless ages runs," in earth and heaven. For these are but parts of the scheme and plan of a divine evolution (mind for material and material for mind) under all the peculiar relations which can or will occur in the evolutionary series. The series here is one in which creative power has had a hand; from the monad to the elephant, from the first cell which originated a human form, to the highest and most intelligent archangel before the throne of God, or may be found in the lowest or most depraved in the pit of perdition; mind has had to do with matter up to the point and process of translation, when matter drops off by the refining process, and we become like gods, knowing good and departing from evil. This is spiritual evolution, and is also accomplished by the purpose and will of God, operating upon human minds and wills until his purpose be accomplished, either in blessing, or if we will not, in cursing or malediction, or perdition.

Submitted, with no disposition to discussion on the subject, but to put the other side of the question.

ORIGINAL INVESTIGATIONS ON THE NATURAL HISTORY, (SYMPTOMS AND PATHOLOGY) OF YELLOW FEVER. 1854–1894.

BY JOSEPH JONES, M.D., LL.D.
NEW ORLEANS, LA.

(*Continued from page 321.*)

CHAPTER VI.

Case 8.— Double pneumonia, bloody sputa, recovery. Robert Hanley; Irishman; came to America in 1846 and has been living in New Orleans since 1847. Weighs 150 pounds; florid complexion, light hair and blue eyes. On Jan. 6, 1877, while working in the hold of a ship, which was very close and hot, was thrown into a great heat and profuse perspiration. Being called suddenly, he left the ship without his coat (his shirt being saturated with perspiration), went on shore and was exposed to a cold wind, and in a few minutes was seized with a severe pain in the left side below the seventh rib. The pain continued to increase on the seventh and eighth, and upon the last day he began to cough and to expectorate thick, bright red sputa. Could not lie on the right side in consequence of the pain and oppression of breathing. On the tenth, eleventh and twelfth the pain and oppression of breathing increased and was attended with high fever. Admitted to Charity Hospital January 12. January 13, A.M., tongue red at tip and edges and furred in the center; sputa thick, brownish-red and streaked with bright blood; high fever, anemia, restless. Respiration labored and attended with sharp pain greatest over region of middle and lower lobes of left lung. Face flushed. Skin bathed in hot perspiration. Upon percussion, dullness amounting to almost complete flatness over middle and lower lobe of left lung and over lower lobe of right lung. Auscultation revealed tubular breathing and crepitant râles upon full inspiration over the regions indicated. The patient was placed upon 2 grains each of quinin and Dover's powder every three hours, and five drops of the tincture of yellow jessamine every two hours. Turpentine stupes were applied over the affected portions of both lungs; milk punch and beef tea ordered in small quantities at regular intervals of two hours. This treatment was continued for several days and the bowels were opened when necessary by the ordinary efferverscing powders. On the 20th there was a marked improvement and the chlorids which had been absent reappeared in the urine and the sputa contained much less blood. Convalescence continued and on the 25th the patient was able to walk about the ward. He was finally restored to health, although he was allowed to remain in the ward for four weeks, until his strength was fully restored. The following table presents the relations of the pulse, respiration and temperature:

Date.	Pulse.		Resp.		Temp.	
1877	M.	E.	M.	E.	M.	E.
Jan. 13	109	118	42	40	101.5°	103.2°
" 14	114	104	41	41	103	101.5
" 15	90	100	36	38	101	104
" 16	86	87	30	37	100	101.5
" 17	88	89	36	37	100	99
" 18	72	76	29	32	97	97
" 19	68	67	28	32	98	98.3
" 20	96	65	33	28	98.3	98.3
" 21	94	. . . .	32	. . . .	98.5	. . . . .
" 22	. . . .	72	. . . .	24	. . . . .	97
" 23	61	62	22	26	97	97.8
" 24	65	60	22	20	97.5	98
" 25	60	. . . .	20	. . . .	97	. . . . .
" 26	82	. . . .	24	. . . .	98.5	. . . . .

Case 9.—Pneumonia; middle and lower lobes of left lung involved. John Dugan; age 21; native of New Orleans; longshoreman. Has enjoyed good health up to July, 1876, when he suffered with chills and fever. On Dec. 15, 1876, admitted to Charity Hospital with pneumonia and was discharged Jan. 6, 1877. February 21, seized with severe chill, attended with cough, high fever and severe pain in left side. Admitted to Charity Hospital February 25; high fever, rapid pulse and respiration; tongue red at tip and edges and furred in center; middle and lower lobes of left lung dull upon percussion, with tubular breathing and crepitant râles; chlorids absent from urine; sputa thick and rusty colored. The treatment was similar to that instituted in the preceding case; namely, quinin and Dover's powder, tincture of yellow jessamine, turpentine stupes, milk punch and beef tea. The results were favorable. February 27, oppression of breathing and pain in left side diminished; February 28, free from pain, although left side still dull upon percussion; sputa still mixed with blood; small quantity of chlorids in urine. Continued to improve up to March 3, the expectoration being quite copious, with progressive diminution of dullness; reappearance of crepitant, subcrepitant and mucous râles over the affected portions of the left lung. March 3, the temperature and pulse were normal and patient able to sit up with good appetite. Recovery rapid and complete. The following observations were recorded:

Date.	Pulse.		Resp.		Temp.	
1877	M.	E.	M.	E.	M.	E.
Feb. 26	120	108	40	36	103 °	102 °
" 27	94	105	28	44	99	101
" 28	80	86	28	37	98	101
Mch. 1	78	77	26	28	98.2	99
" 2	72	76	22	28	98	98.2
" 3	72	73	24	24	98	98.2

It is evident that in the preceding cases of pneumonia, the combined use of quinin, Dover's powder and tincture of yellow jessamine reduced the frequency of the pulse, diminished the temperature and promoted the arrest and resolution of the pneumonic inflammation.

Case 10.—Pneumonia of right lung, engrafted on malarial fever. John C. Keller; age 24 years; admitted to Charity Hospital Feb. 4, 1874. Occupation, clerk. Seized with a severe chill January 30, followed by high fever. Middle lobe of right lung in second stage of pneumonic inflammation; lower lobe of left lung in similar condition. February 4, evening temperature of axilla 104.8 degrees. February 5, morning, respiration 36, pulse 126, temperature 103; evening temperature 105. Suffers from a painful cough and oppression of breathing; sleep disturbed; skin dry and hot; tongue red at tip and edges and coated heavily with yellow fur. Sputa abundant and mixed with considerable quantities of blood. February 6, morning, respiration 38, pulse 118, temperature 104.8; evening temperature 105.3. February 7, morning, respiration 39, pulse 128, temperature 104.1. This day the patient had a profuse hemorrhage from his lungs and his stools also contained blood. The hemorrhage was attended with a marked depression of temperature, as is often the case in the black vomit (hemorrhage from the stomach) in yellow fever. February 8, morning, respiration 37, pulse 121, temperature 103; evening temperature 101.5. February 9, morning, respiration 38, pulse 125, temperature 101.8; evening temperature 101.6. February 10, morning, respiration 34, pulse 108, temperature 101.2; evening temperature 103.2. February 11, morning, respiration 34, pulse 104, temperature 102; evening temperature 102.6. February 12, respiration 30, pulse 101, temperature 101.5; evening temperature 101.3. February 13, morning, respiration 32, pulse 120, temperature 100; evening temperature 102. February 14, respiration 32, pulse 96, temperature 100. February 15, morning temperature 98.9; evening, 100.8. The patient continued to improve and was discharged March 3.

It is worthy of note that in this case of pneumonia, hemorrhage from the lungs was attended, as in cases of hemorrhage from the stomach and bowels in yellow fever, with a decided reduction of temperature, and also that the loss of blood from the lungs in this case appeared to be productive of good and to mark the period of convalescence.

Case 11.—Pleuro-pneumonia, solidification of entire lung, death. I. D., age 28; entered Charity Hospital Feb. 19, 1874. February 20, morning, respiration 36, pulse 108, temperature 102; evening temperature 102.7. February 21, respiration 26, pulse 95, temperature 103. February 22, respiration 39, pulse 104, temperature 102.7. February 23, respiration 39, pulse 115, temperature 103.5. February 24, respiration 40, pulse 120, temperature 102.5. February 25, respiration 38, pulse 114, temperature 97. This patient died on the night of the 25th. Entire right lung solidified, as shown by post-mortem examination. Great capillary congestion before death.

Case 12.—Abscess of lungs, following double pneumonia. A. R., age 26; admitted into Charity Hospital with pneumonia (double) Nov. 20, 1873. During the active stages of the pneumonic inflammation the temperature of the axilla reached 109 degrees F.; the pulse ranged from 100 to 130, and the respiration from 50 to 58 per minute. A large portion of the right lung passed into the stage of solidification and gray hepatization, and a large cavity formed in the middle lobe of the right lung; the patient was not restored to health until the end of four months. During the period in which these changes were taking place in the lungs, daily observations were made upon the pulse, respiration and temperature, numbering over seven hundred. During a period of one hundred and twenty days, while structural alterations were taking place in the lungs the pulse ranged from 80 to 130; the respiration from 22 to 40, and the temperature of the axilla in the morning from 99 to 102 degrees F., and in the evening from 100 to 104 degrees F.

Case 13.—Pneumonia engrafted on malarial fever. P. W., age 33; entered Charity Hospital Dec. 11, 1873. Had suffered with chills and fever for one week before entering the hospital. Lower lobes of both lungs involved on the 12th. During fourteen days the active stages of the disease, the morning temperatures ranged from 101.5 to 105 degrees, and the evening temperatures from 103 to 106 degrees. On the fifteenth day there was a distinct remission of the fever, which rose again on the seventeenth day, declined on the eighteenth to twenty-fourth days. On the twenty-fifth, the temperature again rose, apparently from the supervention of a fresh paroxysm and the involvement of other portions of the pulmonary tissues in the pneumonic inflammation. In this which was the last paroxysm and followed by convalescence the axillary temperature reached 104 degrees. The pulse in this case ranged from 72 to 120; and the respiration from 24 to 40 per minute.

Case 14.—Double pneumonia. Michael Castello; age 30; entered Charity Hospital Jan. 13, 1874. Had chills and fever two days before entering hospital. January 15, delirious. Region of left lung dull upon percussion, with crepitant and subcrepitant râles. Lower lobe of right lung dull upon percussion with crepitant râles, oppressed breathing with severe cutting pains. Tongue red at tip and edges and coated with yellowish fur in center. Urine high colored; specific gravity 1022; strong acid reaction, and mere trace of chlorids; no albumen. Morning, pulse 120, respiration 25, temperature 105.2 degrees; evening, temperature 105 degrees. January 16, delirious; increased dullness over left lung and lower lobe of right lung, with tubular breathing, bronchophony and increased vocal resonance. Specific gravity of urine 1025; high colored; strong acid reaction; absence of chlorids; no albumen. Morning, pulse 114, respiration 32, temperature 104 degrees; evening, temperature 105 degrees. January 17, morning, pulse 114, respiration 32, temperature 104 degrees; evening, 104.2. Trace of chlorids in urine. January 18, morning, pulse 124, respiration 40, temperature 103.5 degrees; evening, temperature 103.5 degrees. Trace of chlorids in urine. January 19, morning, pulse 114, respiration 32, temperature 101.5 degrees. Trace of chlorids in urin. There has been a marked decline of temperature, the pulse and respiration are also less frequent, and the delirium is disappearing. January 20, morning, pulse 98, respiration 26, temperature 99.5; evening 100.6 degrees. While the physical signs show no marked change, the urine shows a marked increase of the chlorids, the temperature has declined and the circulation and respiration are slower and more natural. The delirium has disappeared and the patient shows signs of marked improvement. January 21, continues to improve. Morning, pulse 84, respiration 28, temperature 98.5; evening, 99.8. Chlorids increasing in urine. January 22, morning, pulse 80, respiration 24, temperature 98.4. January 23, continues to improve; the air is again entering the solidified portions of the lungs and there is a great increase of the chlorids in the urine. Morning, pulse 66, respiration 24, temperature 97.5; evening, temperature 99.2. January 24, pulse 70, respiration 20, temperature 99.2;

evening, temperature 100.3. Specific gravity of urine 1022 Chlorids abundant. January 25, morning, pulse 74, respiration 22, temperature 98.4; evening, temperature 99.6. January 26, morning, pulse 72, respiration 20, temperature 98; evening, 98.7. January 27, morning, pulse 76, respiration 20, temperature 98.4; evening, temperature 101.1. Continued to improve and on the 28th was able to dress and come down to amphitheater.

Case 15.—Pleuro-pneumonia of left lung, recovery. L. Winans; age 30; native of Ohio; on the trip from St. Louis to New Orleans was seized with severe chill followed by diarrhea and pain in left side. Entered Charity Hospital, ward 27, Jan. 3, 1874. Face flushed, frequent and painful cough, rusty colored pneumonic sputa, dullness over lower portion of left lung, bronchophony, bronchial respiration, increased local fremitus, vesicular murmur heard only in clavicular region of left lung, some pleuritic pain in left side, hot dry skin, dry red tongue, thirsty, loss of appetite and restlessness. Morning, pulse 110; respiration 28; temperature 104. The treatment which I described at length in the article on "Pneumonia," vol. 1, "Medical and Surgical Memoirs," was instituted. Three and a half grains each of quinin and Dover's powder were administered every four hours, and 4 drops of the tincture of veratrum virid, every four hours, alternating with the powders of quinin and ipecac et opii, turpentine stupes applied over region of affected lungs. Beef tea and milk punch freely administered. Mere trace of chlorids in urine. January 4, morning, pulse 104, respiration 28, temperature 102. The quinin and Dover's powders and veratrum appear to have effected a decided reduction in the temperature, although patient is restless and anxious, and complains of some pain in the left side. January 5, morning, pulse 80, temperature 100.4, respiration 28. No chlorids in urine, specific gravity 1018, strong acid reaction, bowels moved, no albumen in urine. Evening, temperature 100.2. January 6, temperature still depressed, trace of chlorids in urine; substituted tincture of yellow jessamine 10 drops every four hours for the tincture of veratrum. Morning, pulse 94, respiration 32, temperature 102.5. Evening, temperature 105.5. January 7, left lung completely solidified, sputa abundant and rusty colored. Morning, pulse 112, respiration 32, temperature 104.4. Evening, temperature 103.5. January 8, pulse 100, respiration 36, temperature 102 5. Evening, temperature, 103.5. January 9, morning, pulse 104, respiration 30, temperature 100.2. Evening, temperature 102. January 10, pulse 80, respiration 26, temperature 98.9. Evening, temperature 99. January 11. morning, pulse 80, respiration 26, temperature 98.2. Evening, temperature, 99. Chlorids reappear in urine, specific gravity 1018, no albumen has appeared in the urine up to the present time. January 12, morning, pulse 78, respiration 26, temperature 98.5. Evening, temperature 98.8. On this day chlorids reappeared in the urine, continued to improve and was discharged cured.

Case 16.—Pneumonia. Michael Burk; age 22; native of Germany; laborer. Entered Charity Hospital Jan. 12, 1874. Was taken with a chill followed by a high and continued fever four days before entering the hospital. January 13, great pain in left side, hot dry skin, dullness over left lung, bronchophony and increased local fremitus with tubular breathing. Morning, pulse 120, respiration 52, temperature 101.3. January 14, patient complains of great pain in left side and lower portion of right lung, which is dull upon percussion, rusty colored sputa. Morning, pulse 118, respiration 50, temperature 104.5. Quinin and Dover's powder, three grains of each every three hours administered internally. Tablespoonful of officinal solution of acetate of ammonia every four hours. Turpentine stupes to chest. Beef tea and milk punch. January 15, rested badly during night, delirious, tubular breathing and dullness upon percussion over left lung, dullness upon percussion over lower portion of right lung. Morning, pulse 112, respiration 56, temperature 102. January 16, very restless, delirious, physical signs the same, absence of chlorids in urine, no albumen in urine. Morning, pulse 104, respiration 48, temperature 102.6. January 17, delirious, necessary to confine patient to the bed, no chlorids in the urine, trace of albumen in urine. Morning, pulse 124, respiration 64, temperature 103.5. January 18, wild delirium, was held in bed all night by nurses, albumen in abundance in urine but no chlorids. Morning, pulse 120, respiration 64, temperature 103.5. Evening, temperature 105. January 18, patient more quiet, albumen not so abundant in urine, chlorids absent. Morning, pulse 132, respiration 62, temperature 104. Evening 104.3. January 20, patient in semi-conscious state, traces of albumen in urine, no chlorids. Morning, pulse 112, respiration 64, temperature 103. Evening 104.5. Alcoholic stimulants have been freely given. January 21, no delirium, rested well during the night, some appetite, albumen disappearing from the urine, chlorids returning, expectoration more free. Morning, pulse, 90, respiration 36, temperature 101.9. Evening, temperature 102. Convalescence was slow in this case. The patient sat up for the first time about February 2. The temperature remained elevated until February 10; it reached 103 on this and for a period of twenty-two days, from January 21 to February 10 ranged in the morning from 101 to 103, and in the evening from 101 to 104. Pulse from 90 to 140, and respiration from 32 to 58 per minute. Recovery tedious but satisfactory.

Case 17.—Double pneumonia, death. Peter Wonts, age 27. Entered Charity Hospital Dec. 18, 1874; pneumonic inflammation of lower lobes of both lungs, great oppression in breathing, purple lips and extremities, delirium. The morning temperatures ranged from 97.5 to 102; and the evening temperatures from 100 to 105.5, pulse from 96 to 120, respiration from 25 to 35. This patient died on the tenth day after entering the hospital.

Case 18.—Pleuritis. T. Lynch, age 21, native of Ireland; entered Charity Hospital Dec. 20, 1873. Had been treated in this institution two weeks before, for intermittent fever. December 20, evening. Intense pain in right side, dullness upon percussion of right lung with friction, pleuritic sounds in respiration. Pulse 130, respiration 25, temperature, axilla 105. December 21. Pain in side intense, morning pulse 77, respiration 23, temperature 101. Evening pulse 110, respiration 23, temperature 106. The patient has been treated with quinin and Dover's powders, 3½ grs. of last every three hours, and turpentine stupes to chest, these measures appeared to be beneficial and to rapidly reduce the temperature. December 22. Morning, pulse 76, respiration 30, temperature 99; evening, pulse 80, respiration 30, temperature 100. At 3 P.M. on the preceding day the patient had a severe chill followed by high fever in which the temperature reached 106. A large plaster was applied to the side, quinin freely administered with beneficial results as stated. December 23, slept better during the night, improving, pain in side much relieved. Morning, pulse 72, respiration 25, temperature 99; evening, pulse 80, respiration 28, temperature 101. December 24. Morning, pulse 86, respiration 32, temperature 100; evening, pulse 82, respiration 30, temperature 102. December 25. Morning, pulse 75, respiration 28, temperature 99.5; evening, pulse 83, respiration 30, temperature 101. December 26. Morning, pulse 70, respiration 20, temperature 99; evening, pulse 75, respiration 24, temperature 100. The patient continued to improve and was discharged in a few days after this observation.

Case 19.—Pneumonia. Supervening on malarial fever, cured. N. T,, aged 24, entered Charity Hospital Jan. 6, 1874. Arrived in New Orleans in destitute condition and slept on levee nights and January 5 had a violent chill followed by congestion of lower lobes of both lungs and high temperature, 106.2, pulse 120, respiration 38. Under the action of the quinin and Dover's powders, rapid reduction of temperature and improvement of symptoms.

Case 20.—Typhoid fever. T. P., entered Charity Hospital Jan. 11, 1874, rapid pulse, high temperature, great nervous prostration, muttering delirium. During a period of thirty-two days the temperature oscillated between 99 and 106. The temperature in the morning varied from 1 to 7 degrees lower than the evening temperature. On January 12, (second day after entrance) the morning temperature was 104 and the evening temperature 105. On January 23 the morning temperature was 99 and the evening 106; on the 28th morning temperature 100, evening 103; the 30th, morning temperature 102, evening 105. The pulse ranged from 90 to 110, respiration from 30 to 56.

Case 21.—Typhoid fever. H. F., age 27. Entered Charity Hospital November 29, high fever continued from November 29 to December 21. The range of the temperature and pulse are as follows: November 29, evening, pulse 102, temperature 105. 30th, morning, pulse 86, temperature 103; evening, pulse 94, temperature 105. December 1, morning, pulse 82, temperature 103; evening, pulse 90, temperature 105. 2d, morning, pulse 80, temperature 103; evening, pulse 82. temperature 103.5. 3d, morning, pulse 86, temperature 103.5; evening, pulse 90, temperature 104.5. 4th, morning, pulse 90, temperature 103; evening, pulse 86, temperature 104.5. 5th, morning, pulse 82, temperature 101; evening, pulse 88, temperature 103.4. 6th, morning, pulse 80, temperature 101; evening, pulse 88, temperature 103. 7th, morning, pulse 100, temperature 104; evening, pulse 94, temperature 104. 8th, morning, pulse 82, temperature 99; evening, pulse

104, temperature 105. 9th, morning, pulse 90, temperature 112.5; evening, pulse 88, temperature 104. 10th, morning, pulse 82, temperature 100.5; evening, pulse 104, temperature 104. 11th, morning, pulse 90, temperature 100.5; evening, pulse 88, temperature 104.5. 12th, morning, pulse 108, temperature 100; evening, pulse 94, temperature 104. 13th, morning, pulse 86, temperature 103; evening, pulse 80, temperature 101. 14th, morning, pulse 84, temperature 100; evening, pulse 80, temperature 100. 15th, morning, pulse 80, temperature 99.5; evening, pulse 80, temperature 100.3. 16th, morning, pulse 90, temperature 98.8; evening, pulse 80, temperature 100.2. 17th, morning, pulse 86, temperature 98.5; evening, pulse 80, temperature 100. 18th, morning, pulse 80, temperature 99.5; evening, pulse 120, temperature 103.6. 19th, morning, pulse 110, temperature 102; evening, pulse 100, temperature 103. 20th, morning, pulse 96, temperature 101.5; evening, pulse 92, temperature 100.5. After this date the temperature gradually descended to the normal state and the bowels became constipated.

Case 22.—Typhoid fever. John Martin, age 24, entered Charity Hospital November 21. In this case the diarrhea and fever continued for a period of forty-four days. The morning temperature ranged during this period between 98 and 105, and the evening temperature between 98.5 and 105 degrees F. The pulse ranged from 70 to 120; the respirations from 24 to 34 per minute.

Case 23.—Albuminuria and malarial fever. J. P. Banem; age 30; admitted to Charity Hospital Jan. 20, 1874. Has been living on the banks of the Mississippi River, where he contracted intermittent fever, from which he has suffered during the past three months. The condition of the patient is as follows: Great anemia; tongue swollen, indented by the teeth along the edges, pale, flabby and tremulous; complexion sallow and of a waxlike greenish tinge; features swollen; abdomen distended with fluid; lower extremities swollen; complains of headache and dullness of intellect; urine high colored and scant, and loaded with albumen. This patient was kept under observation for about three months (ninety days), and at various periods the urine contained blood corpuscles in addition to the albumen and urinary casts. The treatment consisted mainly in keeping the bowels open by means of saline purgatives, the occasional use of quinin for several consecutive days, and the administration of diuretics and alteratives, among which may be mentioned iodid of potassium combined with wine of colchicum and syrup of squills. The strength was maintained by nutritious diet and the preparations of iron. Under these measures the improvement was gradual and decided; the dropsical effusion disappeared and the patient was discharged at his own request in April.

In this case the action of the heart was quick and irritable; no valvular disease, however, was detected. Edema of the lungs was a troublesome symptom. The pulse was rapid and irritable, varying from 100 to 130; the respiration was often embarrassed and ranged from 20 to 30; the temperature in the morning ranged from 97.5 to 100, and in the evening from 99 to 101. This case appears to have been dependent to a great extent upon the action of malaria.

Case 24.—Constitutional syphilis. R. N. W., age 49½ years. Entered Charity Hospital Dec. 12, 1873. Contracted syphilis in 1866; suffers with severe pains in the extremities and head which increase greatly during the night and destroy his rest. December 17, morning, temperature 99.6, pulse 80, respiration 20; evening, temperature 100.6. 18th, morning, temperature 98.5; pulse 80, respiration 18; evening, temperature 100. 19th, morning, temperature 98.5, pulse 96, respiration 24; evening, temperature 100. The observations upon the temperature and pulse were continued for a considerable length of time, and the former ranged from 98 Fah. in the morning to 101 in the evening and the latter from 80 to 100.

Case 25.—Cirrhosis of liver; ascites; dysentery and diarrhea. T. G., age 50; native of Cincinnati, Ohio. Entered Charity Hospital March 4, 1874. Has been a hard drinker for twenty-two years. Had malarial fever in July, 1873. Has lost flesh, his weight decreasing from 154 to 123 pounds. Abdomen distended with liquid; lower extremities edematous; bowels very loose. In this case the temperature in the axilla varied in the morning from 98.5 Fah. to 99.5; and in the evening from 99 to 100.5; the pulse varied from 70 to 90 per minute.

Case 26.—Aneurysm of the arch and descending portions of the aorta. L. D.; age 43; native of Ireland; has lived in America twenty years; served in the Confederate Army about twelve months. Laborer. Entered Charity Hospital March 4, 1874. States that about one month before entering the hospital, while rolling a bale of cotton, felt a sudden pain in the abdominal region and upon examination found a small tumor which has been steadily increasing from that date, and at times interferes with his respiration. The second sound of the heart is accompanied by a distinct aortic murmur and the pulse is irregular and at times dicrotic. The temperature in this case ranged from 98.4 Fah. to 101.3, and the pulse from 80 to 90.

Case 27.—Aneurysm of arch of aorta and phthisis pulmonalis. Nicholas Batterton; age 33 years. Admitted into Charity Hospital Dec. 1, 1873. Patient says that he has been sick for one year and that the disease began with pneumonia. His brother died with phthisis. After the attack of pneumonia, suffered with a troublesome cough, and has had hemorrhage from the lungs seven times. The arch of the aorta is dilated and the tumor is evident in the supra-clavicular region, where the pulsation can be seen and also readily felt. When the fingers are pressed above the superior border of the sternum, downward and backward, the round pulsating contour of the aneurysm is distinctly felt. Observations were continued in this case, for one hundred and twenty days, and during this period the pulse varied from 60 to 100, the respiration from 30 to 40 per minute, the temperature in the morning from 99 to 101, and in the evening from 100.3 to 103.5. Auscultation revealed a distinct diastolic mitral murmur, propagated along ascending aorta and along the arch. Upon cod-liver oil and syrup of the hypophosphites, this patient continued much in the same state, until the winter of 1874, when the emaciation became more rapid and the patient died Nov. 2, 1874. Death in this case was in no manner attributable to the aneurysm of the aorta.

Case 28.—Abscess of thigh and extensive bed sores resulting from yellow fever. E. Scheiss; age 37; native of Germany. Entered Charity Hospital Oct. 29, 1873. Had been sick with yellow fever several days before entrance. Attack severe attended with high fever, vomiting and intense jaundice. During the period of convalescence and calm, a swelling was observed in left leg which greatly increased. From the confinement and also from the deranged state of the fluids caused by the yellow fever poison, large bed sores formed upon sacrum and hips. A large abscess of the thigh was opened. Patient died from exhaustion induced by hectic fever February 24. During 140 days following the active stage of the yellow fever the temperature ranged from 100 to 105.2; the evening temperature ranged from 101.5 to 105.2. The pulse varied from 100 to 140 and the respiration from 24 to 34.

Case 29.—Mitral regurgitation, hypertrophy and dilatation of heart, and Bright's disease. R. Manez; age 36. Admitted to Charity Hospital Jan. 29, 1874. Had yellow fever in 1854 and 1858; contracted syphilis in 1864; suffered with rheumatism in 1869; malarial fever in 1871 on Red River. In August, 1873, feet began to swell, the liver was enlarged and the action of the heart irregular. Urine loaded with albumen. Owing to the obstruction to the circulation the patient suffered with the symptoms of edema of the lungs, accompanied with bloody expectoration, ascites and anasarca. In this case the pulse varied from 52 to 120; respiration from 20 to 28; temperature from 98 to 102.2. The temperature attained the highest point in the evening of February 5. The reduction of the pulse to 52 beats per minute was due to the action of digitalis.

A comparison of the results recorded illustrating the changes of the pulse, respiration and temperature in various diseases with those of yellow fever, establishes the following conclusions:

1. Yellow fever is a distinct specific disease.

2. Yellow fever is distinguished from other diseases by the frequency of the occurrence of black vomit and jaundice, and the progressive diminution of the frequency of the pulse after the establishment of the maximum temperature, also the want of correspondence observed in many cases between the rapidity of the respiration and the action of the heart.

3. As a general rule in acute diseases, the rapidity of the action of the heart corresponds with the rapidity of the respiration; but in some cases of yellow fever in which the respiration is increased fourfold, the pulse actually beats less rapidly than in health.

4. Yellow fever is a continued form of a single paroxysm, in which a powerful depressing effect is evidenced upon the action of the heart. The cause of the depressed action of the heart will be discussed in the following chapter relating to the changes of the blood.

5. If the thermometric changes of yellow fever be projected as in the form of charts, and if a comparison be instituted with the thermometric changes in other diseases, it will be observed that those of the former disease more nearly resemble the rapid rise and sudden fall of temperature observed in varioloid without secondary fever, mild scarlatina, and simple uncomplicated pneumonia which runs its course without fresh accessions of inflammatory action; while on the other hand, they differ materially from the rapid and oft recurring elevations and depressions of temperature characteristic of the various forms of paroxysmal malarial fever.

6. The cause of the rapid rise and declension of the temperature in yellow fever must be sought chiefly in the changes induced in the blood and in those organs upon which the circulation and integrity of the blood depends. Neither the rapid rise nor the sudden declension of the temperature can be referred wholly to the effects of the yellow fever poison upon the nervous system.

While it must be admitted that the experiments of Chossat, Sir Richard Brodie, H. Nasse, Claude Bernard, Brown-Séquard, Budgé, Waller, De Ruyter, Schiff, Naunyn and Quincke, and the experiments of Tscheshichim, in which division of the medulla oblongata near its junction with the pons, caused a remarkable elevation of temperature from 102.92 to 108.68 Fah. and finally convulsions and death; and a large number of pathologic observations, in which most remarkable elevations and variations of temperature accompany profound alterations and disturbances of the nervous system, without corresponding changes in the respiration and circulation, sustain the theory of centers of control which have their seat in the brain, and which regulate the activity of the spinal cord, (when they are destroyed, the activity of the spinal cord being morbidly increased, as manifested by increased reflex action, quickened respiration, acceleration of the cardiac systole, and increased animal heat), and that a great part of the pathologic phenomena of warmth may be only the expression of the action of the vasomotor nerves, and still farther that the integrity of certain parts of the central nervous apparatus is more necessary for the regulation of animal heat than that of any other part of the body; on the other hand, Breuer and Chrobok, after an investigation of the question, whether the nerves of a part supply the stimulus which causes the febrile elevation of temperature in an inflamed part, by means of experiments on animals in whom they have as far as possible divided all the nerves of one part of the body, think themselves justified in concluding that the fever of the traumatic inflammation is independent of the nervous connections of the inflamed part, with the nerve centers; and by an extended series of observations, (see note) I have established the fact that in hospital gangrene and pyemia, the elevations of temperature are independent of the local lesions of the structures, and are coincident with the introduction of the gangrenous and pyemic poisons into the blood, and the changes of temperature are intimately associated with the changes of the blood and urine, and are invariably accompanied by increased amounts of such constituents as urea, phosphoric and sulphuric acids, which result from the chemic changes of the solids and fluids of the body; and even the traumatic fever accompanying gunshot wounds arises from the introduction of inflammatory products into the blood, and depends not so much upon the extent and nature of the wounds as upon the state of the solids and fluids at the time of the reception of the injury, and upon the character of the inflammatory products absorbed into the circulatory fluid. Even in such inflammatory diseases as pneumonia, attended with extensive tissue change, the introduction of certain organic products into the blood must be active to a greater or less extent in the production of high temperatures.

It is well known that some of the most violent poisons, during their direct action upon the nervous system, are unattended with elevations of temperature; while on the other hand putrid matter, pus and certain animal secretions, as the poison of the rattlesnake and copperhead of this country, induce profound alterations in the constitution of the blood, attended with the most marked variations of temperature; and in the action of the latter class of poisons, the phenomena appear to be akin to the changes which may be induced by ferments, which are not only capable of increasing the amount of heat, but may be limited in their action, or in the amount and character of the changes which they induce in virtue of their chemic constitution and that of the blood or medium in which they are active.

It is well established that certain substances as woorara, coffee, musk and camphor, and putrid fluids, have a direct effect in raising the temperature after their entrance into the circulation.

Voisin and Lionville, by means of subcutaneous injections of woorara, induced a complete artificial fever in human beings, with rigors, heats and sweatings, the temperature rising to 104.8 F., accompanied with all the signs of febrile circulation and secretion and disturbance of the nervous system.

The effects of certain animal substances in elevating the temperature, when injected into the blood, have been shown by the experiments of Billroth, Hufschmidt, O. Weber, Fresse and others. When the putrid solutions or pus are injected in the blood, the temperature rises considerably even within two hours after injection, and reaches its maximum in from two to twenty-eight hours; after a single injection a rapid defervescence generally sets in, shortly after the acme has been reached; while on the other hand, after repeated injections, death constantly occurred generally with high temperatures. Fluids from inflamed tissues, pyemic and septicemic blood, and even the blood of an animal merely suffering from simple inflammatory fever, or from other kinds of fever, produced similar deviations of temperature.

Fresse has determined by experiments, that the rise of temperature induced by the introduction into the blood of the products of decomposition, and of inflammatory tissue destruction, do not depend upon the pus corpuscles, nor upon the so-called germinal matter, which according to some, are such powerful and essential agents in the production of inflammatory diseases, but upon the serum of the fluid;

NOTE.—Investigations upon the Nature, Causes and Treatment of Hospital Gangrene, as it prevailed in the Confederate Armies, 1861–1865, by Joseph Jones, M.D. Surgical Memoirs United States Sanitary Commission, vol. ii, pp. 146–570.

even boiling and subsequent filtration does not destroy the property; and that the removal of the fibrin and even the filtration of the blood of animals suffering from fever, do not deprive it of the pyrogenic effects when injected into the living circulating blood.

The unknown cause which excites the specific morbid process of yellow fever would appear to have something in common with the action of such putrid animal substances, when introduced into the blood; and the fact is worthy of careful consideration that the property possessed by such matters, of exciting chemic change and elevation of temperature, was not destroyed by boiling and subsequent filtration of the putrid matters, for we have thus a clear demonstration that the animalculæ, vegetable or germinal theories, as to the origin of yellow fever, are not *absolutely necessary* to the explanation of the febrile phenomena.

Neither the rapid rise nor the sudden declension of the temperature in yellow fever, therefore, are *necessarily* referable *solely* to the effects of the poison upon the nervous system; because, in the first place, the changes of the blood are among the first manifestations of diseased action, and the progress and termination of each case is largely dependent upon the extent and character of the changes of the blood and the degree of elevation of the temperature; in the second place, the sudden fall of the temperature during the succeeding stage of calm may be referred to the peculiarity of the self-limited chemic changes excited by the poison, and to the structural alterations induced in the muscular tissue of the heart and in the liver and kidneys, and the sedative action of the bile, urea and other excrementitious products retained in the blood upon the nervous system; and finally, in the third place, the changes of the blood and of the heart, liver and kidneys are of a definite physical and chemical nature and could never be induced by a mere exaltation or depression of nervous action, and must be referred to the introduction and action of some agent or material, related in a definite manner in its chemical constitution and physical properties, to the fluids and solids in which it induces these profound physical and chemical changes.

Without doubt, the action of the yellow fever poison upon the nervous system may be indirect and of the most important character; but the best established facts do not justify us in locating the origin of the disease wholly in the action of the poison upon the nervous system, and in fact the earliest sensible manifestations of disordered nervous action, as evidenced in unconsciousness, loss of appetite and chilly sensations may be entirely secondary to the changes in the blood, by which all parts of the nervous system are surrounded and supplied.

It must, however, be admitted that in the present state of our knowledge it is impossible to refer the elevations and depressions of temperature in yellow fever, with certainty to either the decrease or increase of any one constituent of the blood; for M. Andral has shown that when the blood contains more than .004 of fibrin the temperature rises, and in a corresponding ratio. Thus of all diseases, pneumonia is marked with the greatest increase of fibrin, and is the highest in temperature of all the phlegmasiæ; in eighty-five cases, in only thirteen was the temperature below 39 degrees C. (102.2 degrees F.), in forty-four it was between 39 and 40 degrees C. (102.2 and 104 degrees F.) in twenty-six below 40 degrees C. (104 degrees F.) and 41 degrees C. (105.8 degrees F.); and in two rose to 41.2 degrees C. (106.16 degrees F.). In acute pleurisy, in which there is always less fibrin, the temperature only once reached 41 degrees C. (105.8 F.) and usually oscillated between 38.5 degrees C. (101.3 F.) and 39.5 degrees C. (103.1 degrees F). M. Andral, however, records exceptions to this relationship of the increase of fibrin and the elevation of temperature in inflammatory diseases, as in erysipelas, when there have been only .007 of fibrin, the temperature has been 41.8 degrees C. (107.24 degrees F.); and he very justly does not consider the increase of fibrin and the rise of temperature as cause and effect; for in the pyrexiæ, when there is no excess of fibrin, but rather a diminution of this constituent, the temperature is as high or higher than in the phlegmasiæ; thus 42.4 C. degrees (108.32 degrees F.) have been reached in typhoid fever; 42 degrees C. (107.6 degrees F.) in the event of smallpox, the last stage of ague and in glanders, etc. Indeed, the highest degrees are reached in diseases where there is the least fibrin in the blood. (See note.) Neither do the number of red globules affect the rise of temperature to an appreciable degree in inflammations and fevers, as I have carefully determined by comparison of the constitution of the blood, with the elevations of temperature in various diseases.

(To be continued.)

SOCIETY PROCEEDINGS.

Proceedings of the First Meeting of the American Academy of Railway Surgeons.

Held at the Grand Pacific Hotel, Chicago, Ill., Nov. 9 and 10, 1894.

(Continued from page 327.)

COMPARATIVE VALUE OF PLASTER-OF-PARIS AND SILICATE OF SODA, AS A DRESSING FOR FRACTURES.

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Plaster-of-Paris, and silicate of soda are both valuable agents in the treatment of fractures, when skillfully used by the experienced surgeon; and we soon become so familiar with the use of such common agents as these that we are likely to imagine that any one can readily and in a proper manner apply either of these bandages to any and all kinds of fractured limbs. But because of the careless manner and unscientific way in which inexperienced persons use either the plaster-of-Paris or silicate of soda in the treatment of fractures many failures and results that are not satisfactory are recorded. The first question should always be, Do *we know how* to use any agent or instrument successfully before we condemn it? It may be a failure in our hands, and yet a success in the hands of one experienced. It will not do to condemn or extol an agent or instrument as being good or bad upon a single trial, or upon the authority of a single person; it may require experience to enable a good surgeon to discover the good or bad qualities of an agent, instrument or appliance. I have more than once attempted to use an instrument or surgical device (with which I was not familiar) denounced it as worthless and laid it aside but after seeing it used by an experienced hand it appeared to be perfect. I have tried again and succeeded, came to the conclusion that it was just the thing, I had learned how to use it. This same rule holds good in the application of bandages in cases of fractures. No *one splint* or *one* kind of bandage will do for all kinds of fractures. Different kinds of fractures, as well as fractures of the same kind in different parts of the body, require a splint or bandage well adapted to each individual case.

I am satisfied that the plaster-of-Paris splint when properly applied will fill more indications and be applicable to

NOTE.—Medical Times and Gazette, July 1, 1870.

more kinds and a greater variety of fractures than any one agent in surgical use. The silicate of soda (or liquid glass, as it is sometimes called) is clean, neat, and very fine for small bones. It is easily applied and makes a beautifully light splint or fracture dressing; there is nothing untidy or unclean about it, hence as a dressing for the fastidious, who insist on having everything neat and clean, whether sick or well, this is a very desirable dressing for the smaller bones. But as an agent that is to be used in the treatment of fractures generally, it will not compare favorably with the plaster-of-Paris, which will set or become firm and permanently fixed much sooner than silicate of soda, which dries very slowly and requires a long wait before it becomes firm. In compound fractures, or where an opening is necessary to treat a flesh wound, the plaster-of-Paris is the preferable bandage. One can also succeed better with the plaster-of-Paris, when the surface is irregular or uneven, or where a joint must be included in the bandage. In all cases of railroad fractures except it be of the fingers, you will succeed best with plaster-of-Paris. In fractures of the femur in upper third when it is necessary, in order to fix the short fragment, to include the pelvis as well as the leg in the bandage, the plaster-of-Paris is the only agent out of which to make a perfect dressing. In all injuries about the spine, when it is necessary to secure fixation no agent acts so perfectly as plaster-of-Paris. In general surgical practice it would be very difficult, at least, if not impossible, to find a substitute for it; while silicate of soda is very convenient at times, and makes a fair substitute in certain cases, yet we could dispense with it altogether without much inconvenience.

Some surgeons have advocated the use of silicate of soda for the reason that it is always pure and clean and aseptic. I have never had any trouble in securing plaster-of-Paris which was not strictly pure and clean. I always use dental plaster and prepare it myself when I am ready to use it. I have never had any trouble from either in this respect. I think that there is less trouble in removing a cast or bandage of silicate of soda than plaster-of-Paris, and you do not litter up the surroundings as you must do with the removal of a plaster-of-Paris cast. But this is of little consequence, when compared with its efficiency.

There is what is known as the Bavarian splint—a hinge splint—used for fractures of the leg near the ankle, or including the ankle and foot which is easily and conveniently made of plaster-of-Paris but very difficult to make of silicate of soda.

For bandaging the head in cases of injuries when it is necessary to secure fixation as well as cleanliness, I prefer the starch bandage to either the plaster or the silicate. Hence I argue that by experience in the general practice of surgery, we learn to use a variety of ways and means to adjust and keep in apposition the multiplied varieties of fractures which we are called upon to treat. In some cases we use splints, in some bandages, in others neither splints or bandages. I like the ingenious surgeon who can and will devise something new, if he can not readily secure the old favorite with which he is familiar. Many times a hastily devised appliance in case of emergency has proved to be a valuable acquisition to our surgical armamentarium.

DISCUSSION.

Dr. Harnden—Dr. Jay has called attention to an important point. I know some men who call themselves prominent surgeons who use silicate of soda in cases of fractures of the larger limbs. I was called in six months ago to assist a confrére in applying a silicate of soda dressing to a fracture of the femur in a child about 10 years of age. The child was subject to convulsions and I protested to the doctor against using silicate of soda, although he said it was all right, and he preferred it to plaster-of-Paris. I assisted him in using it under that protest. The limb was badly deformed, and it was caused, the doctor says, by the convulsions, the limb being drawn out of shape before the silicate of soda had thoroughly hardened. I call attention to that point. The Doctor has brought it out very nicely.

Dr. Webb J. Kelly, of Galion, Ohio—Dr. Harnden's remarks bring to my mind a case I saw two or three years since that involved a considerable amount of money, and the treatment was questionable. A passenger on our Southwestern Limited stepped off of the back end of the train and had one limb badly injured about the knee. His home was in St. Louis, he having a brother there who was a practicing physician. He came under our immediate care. We dressed the limb with plaster-of-Paris, applying the dressing nicely, and then telegraphed for his brother. His brother arrived the next morning, examined the case, said the dressing was too heavy, and that there was no sense in using such a dressing. He took off the plaster-of-Paris and applied silicate of soda. In one hour thereafter the patient was placed on a cot and taken to St. Louis, and only a short time ago I was told that in about three or four months thereafter the man died. His death involved a point that came up with his insurance, whether he could have died from that injury, or whether it was the injury sustained in connection with moving him with this light dressing on, some seven or eight hundred miles. There were two accident companies represented in the case and they fought it vigorously, so that the heirs never got a cent. This is a point that nobody ever thought of.

Dr. Parker—I will suggest one point in regard to the use of plaster-of-Paris. I recognize the usefulness of such a dressing, as we all do. I also have found in my own practice that it is not well to apply it immediately in some of the severe injuries we are called upon to treat. I have waited a few days, applying some temporary dressing until the swelling has reached its height, then applying the plaster-of-Paris dressing. In children there is no question of plaster-of-Paris setting quicker, and in fractures that are still movable, it is a more rapidly setting material than silicate of soda. I have been in the habit for a long time, in order to make my plaster bandage lighter, of using pasteboard. You know how easily this material can be torn. It is not necessary for you to cut it with the scissors, but you can tear it easily and use it in connection with your plaster. There is one point I would suggest for your consideration. Possibly you have observed the same thing. It is a frequent custom with surgeons to take a case that has been in splints, where there is a good-sized callus, and put on a plaster bandage, and on the fourteenth day or so allow the patient to get up. I have noticed in those cases that when the bandage is opened at the end of fourteen days or more that the callus has almost entirely disappeared and union had not taken place, although when it was put in the cast there was every evidence that union was taking place. The callus was ample and the indications were that union was taking place. I have a theory to suggest for that which is this: I think the pressure of the bandage on all sides upon the nutrient vessels interrupts or disturbs the normal nutritive action and arrests the callus-forming process. I have seen this a number of times and I have no better explanation for it. I have seen the callus disappear very largely and union delayed. If the limb in these cases is put back into a Volkmann's splint or some apparatus of that kind, in another ten days the leg is solid. On the other hand, I have seen union delayed where Buck's extension has been used on the femur, whereas if the patient's limb is put in a plaster-of Paris dressing union takes place. It is in those cases where there is a good-sized callus and the bandage has been applied snugly, all swelling having disappeared, that the plaster-of-Paris dressing delays union. I call attention to one method of using plaster-of-Paris in spinal injuries because we all have them to treat more or less. I have found the hammock method of applying a plaster jacket to be very advantageous. I make it a rule invariably in spinal injuries to apply a light jacket, because it is impossible to think of suspending patients in a Sayre apparatus. In the hospital with which I am connected they have rigged up an apparatus for this purpose.

Dr. H. J. Maynard, of Cheyenne, Wyo., stated that in all fractures below the knee—even in compound fractures, unless there be much destruction or laceration of soft parts, plaster-of-Paris has been for years his strong hold. In Wyoming he has encountered a great many cases of fracture of the leg among cowboys from falling off horses, and these fractures were almost always below the knee. The first hint he got with regard to the use of the plaster stirrup in fractures was from Dr. Hodgen, of St. Louis, and he has since used it with excellent results in a great many cases.

Dr. Lemen said if there were any members present who were not familiar with the manner of making and applying the plaster stirrup, he would demonstrate how it was done. (This he did.) In the last twenty-five years he said he had treated over six hundred fractures with the plaster stirrup and invariably he has obtained good results in cases of fractures below the knee. There were three cardinal principles to be observed in regard to the treatment of all kinds of fractures: 1, the diagnosis—the surgeon should be sure that he has a fracture before he applies a dressing; 2, place the fragments in position; and 3, retain them there. If these three principles are observed the results would invariably be good.

(*To be continued.*)

TABLE SHOWING NUMBER OF STUDENTS IN ATTENDANCE AT ONE HUNDRED AND ONE COLLEGES IN THE UNITED STATES AND CANADA: SESSIONS OF 1894-95, 1893-94, AND AVERAGE YEARLY ATTENDANCE OF PREVIOUS YEARS.

[REPRINTED FROM THE JOURNAL OF JANUARY 12, BY REQUEST.]

	COLLEGES.	Students in Attendance, by Grades: 1894-5.				Total Attendance: 1894-5.	Total Attendance: 1893-4.	Average Yearly Attendance: 1889-90, 1893-94.	Per Cent. of Increase or Decrease.	
		1st.	2d.	3d.	4th.				1894-95 compared with 1893-94.	1894-95 compared with prev. 5 yrs.
	Medical College of Alabama	53	32	16	....	101	102	128	—.98	—21.
1	Medical Department Arkansas Industrial University	50	22	3	....	75	74	85	1.3+	—11.7
2	Cooper Medical College	75	78	75	....	228	228	160	.....	42.5
	Medical Department University of California	33	46	66	....	145	109	89	33.+	63.+
	College of Medicine, University of Southern California	18	16	10	....	44	37	30	18.9+	46.6+
3	Denver Medical College	10	15	13	....	38	38	43	.....	—11.6
4	Medical Department University of Colorado	20	15	10	....	50	35	23	42.8+	117.4+
	Gross Medical College	.....	.....	.....	.....	72	18	51	—10.	41.1+
5	Medical Department Yale University	60	20	14	....	94	73	65	28.7+	44.6+
6	National Medical College	75	40	....	55	170	151	151	12.5+	12.5+
7	Medical Department University of Georgetown	39	36	35	11	121	136	116	—11.	4.3+
8	Medical Department Howard University	48	36	10	25	119	.....	107	.....	11.2+
9	Atlanta Medical College	50	160	....	....	210	173	168	21.4+	28.8+
10	Southern Medical College	52	15	14	....	82	81	87	1.2+	—5.7
	Rush Medical College	330	300	170	....	800	767	613	4.2+	30.5+
	Northwestern University Medical College	96	76	93	8	265	252	259	5.1+	2.3+
11	College of Physicians and Surgeons of Chicago	67	53	40	86	246	288	222	—14.5	10.8+
12	Central College of Physicians and Surgeons, Indianapolis	.....	.....	.....	.....	52	38	36	36.8+	44.4+
13	College of Physicians and Surgeons of Keokuk	122	78	33	5	238	176	141	35.2+	68.8+
	Medical Department State University of Iowa	85	65	43	....	198	162	145	19.1+	33.1+
	Iowa College of Physicians and Surgeons	35	15	13	....	63	48	39	31.2+	61.5+
	Keokuk Medical College	61	42	40	....	143	143	145	.....	—1.3
	Council Bluffs Medical College	5	9	....	....	14	12	.....	16.6+	.....
	Kansas Medical College	29	18	8	....	55	45	44	22.2+	25.+
	Kentucky School of Medicine	.....	.....	.....	.....	426	504	440	—15.4	—3.2
	Hospital College of Medicine	.....	.....	.....	.....	210	123	127	70.7+	65.3+
14	Medical Department New Orleans University	11	12	5	....	28	36	19	—23.2	47.3+
	Medical School of Maine	53	30	30	3	116	97	95	19.6+	21.5+
	College of Physicians and Surgeons of Baltimore	167	168	119	8	462	461	470	.2+	—1.7
15	Baltimore Medical College	140	106	116	8	409	303	219	35.1+	86.7+
	Woman's Medical College of Baltimore	28	8	4	2	42	20	22	110.+	90.9+
16	Johns Hopkins University	32	19	....	....	51	18	.....	183.3+	.....
	Harvard University Medical School	182	124	96	34	436	420	282	3.9+	14.1+
	College of Physicians and Surgeons of Boston	43	77	10	....	120	137	87	—12.4	37.9+
	Tufts College Medical School	41	23	21	....	85	72	.....	18.+	.....
17	Michigan Univ., Department of Medicine and Surgery	116	101	66	65	348	380	364	—8.4	—4.3
	Detroit College of Medicine	111	95	78	....	284	285	218	—.35	30.2+
	Michigan College of Medicine and Surgery	53	41	22	5	121	118	115	2.5+	5.2+
	College of Medicine and Surgery, Univ. of Minnesota	102	66	53	....	221	181	141	22.+	56.7+
18	Minneapolis College of Physicians and Surgeons	22	17	18	....	57	13	.....	.....	.....
	Missouri Medical College	76	64	74	2	216	182	190	18.6+	13.6+
	St. Louis Medical College	43	41	26	....	110	95	121	15.7+	—.9
	Medical Department, University of the State of Missouri	22	12	5	....	39	39	37	5.4+	5.4+
	Kansas City Medical College	34	48	31	....	113	109	88	3.6+	28.4+
19	St. Louis College of Physicians and Surgeons	106	94	42	14	256	140	183	82.8+	40.+
20	University Medical College Kansas City	65	52	39	....	156	119	100	31.+	56.+
21	Ensworth Medical College and Hospital	.....	.....	.....	.....	.....	38	56	.....	.....
	Barnes Medical College	108	92	92	23	315	236	249	33.4+	26.5+
22	Woman's Medical College of St. Louis	18	9	4	....	31	43	26	—28.	19.2+
	Omaha Medical College	38	25	24	....	87	75	49	16.+	77.5+
	John A. Creighton Medical College	11	25	15	....	51	33	.....	54.5+	.....
23	Dartmouth Medical College	.....	.....	.....	.....	139	114	100	21.9+	39.+
24	College of Physicians and Surgeons of Columbia College	222	241	231	83	777	786	630	—1.1	23.3+
25	Albany Medical College	76	53	58	....	187	178	165	8.+	13.3+
26	University Medical College, New York City	152	111	114	....	377	365	531	3.3+	—29.
	Medical Department, University of Buffalo	93	84	64	....	241	188	184	28.+	31.+
27	Long Island College Hospital	95	63	59	24	241	255	231	—5.8	4.3+
28	Bellevue Hospital Medical College	120	110	115	....	405	407	419	—.5	—3.4
29	Woman's Medical College of New York Infirmary	33	19	34	....	86	82	86	4.8+	.....
	Syracuse University College of Medicine	34	30	17	....	81	61	54	32.8+	50.+
	Medical Department of Niagara University	21	23	19	3	66	57	48	19.3+	37.5+
	Leonard Medical College, Shaw University	13	9	15	11	48	57	49	—15.8	—2.
	North Carolina Medical College	.....	24	.....	.....	24	16	.....	50.+	.....
	Medical College of Ohio	.....	.....	.....	.....	296	242	237	22.3+	24.8+
30	Medical Department, Western Reserve University	42	32	32	....	106	93	130	14.+	—18.4
31	Starling Medical College	122	99	86	....	287	223	165	28.7+	73.9+
	Miami Medical College	.....	.....	.....	.....	95	92	89	3.2+	6.7+
32	Toledo Medical College	21	20	9	....	50	38	38	31.5+	31.5+
	Woman's Medical College of Cincinnati	15	10	9	1	35	.....	26	34.6+	.....
33	Ohio Medical University	56	29	26	....	141	79	80	78.5+	78.4+
	Medical Department of Willamette University	14	15	7	....	34	36	31	—5.5	9.7+
34	Medical Department, University of Oregon	23	12	7	....	42	29	28	45.+	82.6+
35	University of Pennsylvania, Medical Department	244	196	352	....	792	787	671	.6+	18.+
36	Jefferson Medical College	220	251	225	....	726	640	591	17.8+	25.4+
37	Woman's Medical College of Pennsylvania	.....	.....	.....	.....	168	192	192	—12.5	—12.5
	Medico-Chirurgical College	74	54	81	....	209	184	140	13.+	49.3+
38	Medical Department, of Western Univ., Pennsylvania	115	94	72	....	281	262	184	7.2+	52.6+
39	Medical College of the State of South Carolina	25	30	25	....	80	70	60	14.3+	33.3
	Nashville Medical College	.....	.....	.....	.....	180	234	251	—23.	—24.2
40	Meharry Medical College	37	32	31	....	101	107	90	—5.6	12.2+
41	Tennessee Medical College	32	22	12	....	66	79	68	—16.4	—12.9
42	Sewanee Medical College	.....	.....	.....	.....	47	25	.....	67.8+	.....
	Medical Department, University of Texas	85	55	8	....	148	116	55	27.6+	169.1+
	Medical Department, University of Vermont	.....	.....	.....	.....	202	192	190	4.9+	6.3+
43	University of Virginia	86	82	....	15	168	143	130	17.4+	29.2+
44	Medical College of Virginia	53	57	7	...	132	96	67	37.5+	97.+
	Wisconsin College of Physicians and Surgeons	16	15	3	....	34	31	.....	9.7+	.....
45	McGill University, Faculty of Medicine	111	120	95	70	398	350	237	13.7+	67.9+
	Faculty of Medicine, Laval University	45	45	55	59	247	286	280	—13.6	—16.
	Trinity Medical College	.....	.....	.....	.....	306	.....	292	.....	4.8+
	Halifax Medical College	26	7	8	6	43	.....	33	.....	30.3+
	University of Bishop's College, Faculty of Medicine	.....	.....	.....	.....	64	54	52	11.1+	15.4+
46	Manitoba Medical College	45	36	23	26	130	101	76	28.7+	71.+
	Ontario Medical College for Women	9	10	7	11	37	34	34	8.8+	8.8+
	Anonymous Schools	356	322	221	118	*1057	1057	910	.....	16.1+

[1] A number preceding a college title refers to a note of comment bearing the same number in the Notes and Comments column following this Table. * Including 40 specials.

The foregoing table gives the following aggregates for the 101 reporting Colleges, including 7 not specified by name, but whose totals are given under the title "Anonymous Schools."

First year students	6,198
Second year students	5,248
Third year students	3,998
Fourth year students	781
Special and irregulars	2,359
Aggregate attendance, 1894	17,784
Aggregate attendance, 1893	15,865
Aggregate average previous years	14,559
Percentages of increase:	
1893 over average of previous years	8.9
1894 over 1893	12.4
1894 over average of previous years	22.1

NOTES AND COMMENTS.

[1] Estimated; return made "first day of regular winter term; students not all in. Decrease in numbers since 1891–92 due to adoption of three years' compulsory course."—Med. Dept., Arkansas Industrial University.

[2] "We have just adopted a four-year curriculum. In the first year of the table, seventy-five includes students of the first and second years of the four-year course, *i.e.*, first year thirty-seven, second year thirty-eight; total seventy-five. I may say in addition that these figures include from two to five physicians each year—as well as a number each year who do not 'stick,' but as the same occurs at other colleges I presume these figures will afford basis for comparison."—Cooper Medical College.

[3] "The decrease in our attendance can be directly traced to the unequal competition of a State school removing to Denver and taking any student who applies, at no cost to the student whatever. It also means that our standard has been maintained."—Denver Medical College.

[4] "Four-years' course begins with the session of 1895–96. A large increase occurred in sessions of 1893–94, owing to second and third years being taught in Denver, instead of Boulder, giving good clinical advantages. The increase seems likely to continue."—Med. Dept. University of Colorado.

[5] "You will note that there has uniformly been a larger number of students in the first year than in the second or third. This has been due to the fact that a very considerable number of students fail at the end of the first year, and therefore have to repeat their work. Our entrance requirements are placed at the high school grade in the subjects in which we require examinations, and these requirements are well enforced, yet we have this large percentage of failures of men who can not stand the work of our first year. I do not know whether this is the experience elsewhere, but certainly our matriculation requirements are higher than the average of the country, and the whole thing seems to me to be a strong argument for the necessity of a higher grade of matriculation. I have felt for some time that this increase in the matriculation requirement was more needed in this country than the increase of time of study; that is, that three years with well prepared students would be better for the profession than a larger number of students kept at their professional work for a year longer. This opinion, however, does not seem to be the one which has prevailed. We have delayed starting the four years' course, hoping that there would be a general increase in matriculation requirements first, and while we do not altogether give up the hope of increasing matriculation examinations, we are about to adopt the four years' course in conformity with the other schools of the better class. I wish you might have included in your examination, the question of the proportion of medical students who are college graduates, and whether this is increasing or diminishing."—Med. Dept., Yale University.

[6] "In this list the third and fourth years are given together, as last year was the beginning of the four year system."—National Medical College.

[7] "A large number of students who matriculated last year withdrew and went to schools with a three-year course. The four-year course was made obligatory last year. This probably reduced the number of matriculates this year."—Med. Dept., Georgetown University.

[8] "Four years' course began with the session of 1892–93."—Med. Dept., Howard University.

[9] "The scholastic year has just been changed to a three-year term, and this is the first year of such change."—Atlanta Medical College.

[10] "Small attendance in our second course is attributed to the fact that those who attended with us in 1893–94 can graduate in ——Medical College at end of this term, while we would require them to attend until end of 1895–96. Those seeking early graduation have thus left us. The large increase in our first-year course is due to the school having adopted a three-year graded course and having by hard work for fifteen years established a very good reputation for giving thorough instruction." Total attendance 1894–95 (82) includes "one fourth year." The college, however, is not a four-year school.—Southern Medical College.

[11] "The reason of decrease is on account of the grade being raised and examination more difficult; also our course being four years instead of three."—College of Physicians and Surgeons of Chicago.

[12] "There is a larger percentage of students who have attended literary colleges than in any former year."—Central College of Physicians and Surgeons, Indianapolis.

[13] "Faculty reorganized in 1890–91, with resulting steady improvement in size of the class."—College of Physicians and Surgeons of Keokuk.

[14] "Our school two years ago adopted a four years' course of study."—Med. Dept., New Orleans University.

[15] Total 409 includes "two fifth year, one eighth year and thirty-six" not graded at date of making report.—Baltimore Medical College.

[16] Attendance 1893–94 includes three women; first year, 1894–95 includes eight women; second year 1894–95 includes two women. "Our medical school is now in its second year. A noteworthy fact is that all of the fifty-two persons admitted in the two years are graduates of a reputable college, holding baccalaureate degrees, and several of them have pursued graduate studies in the sciences after completing their college work. In addition to these undergraduates in medicine, a large number of physicians are attending special courses in the Johns Hopkins Hospital given by University professors: 1893–94—65; 1894–95 (to November 21)—44."—Johns Hopkins University.

[17] "The large senior classes in 1891 and 1892 were due to the fact that in 1890 we changed from a three to a four years' course. This change, which was announced some years beforehand, brought us large classes in 1888 and 1889, students realizing that if they entered later than 1889, they would have to spend four years here. The small senior class in 1893 is explained in the same way. It appears from the figures that we have fewer medical students than we had last year. This is not true. The number is about the same as it was this time last year. There are always students coming here in the fall, who are unprepared to enter the medical course and have to do some work in the literary department or in the high school before they can enter. Some of these will enter the medical department at the beginning of the second semester. They will not be able to graduate with those who entered this last October, but it will increase the number of students appearing on our register when it is published next spring."—Dept. of Med. and Surg., University of Michigan.

[18] "This college was reorganized last year, so members for past years would not be of value for statistical purposes."—Minneapolis College of Physicians and Surgeons.

[19] Causes of increased attendance: "Faculty thoroughly reorganized and prominent teachers from numerous Western schools having been selected. Also refusal to admit inferior students—no candidate being accepted unless presenting diploma of college or high school. College has no entrance examinations; they are farces!"—St. Louis College of Physicians and Surgeons.

[20] There has been an increase, due to the fact that the school has offered unusual clinical advantages, which have attracted students, in spite of the business depression. This increase is so marked, as evidenced by the fact that more than one-third more actual attendants are present, so that the capacity of the college is strained to accommodate the students. Matriculation list is twenty-five higher than attendance."—University Medical College of Kansas City.

[21] "There was a marked falling off last session. The chief cause was, I think, that no one could graduate on two terms and such sought other schools. One of these now finds that his two-term diploma will not register him and he proposes to take another course. Another cause was that some of them thought they could more certainly graduate in another school. The hard times was another cause."—Ensworth Medical College and Hospital.

[22] "We had forty-three students in attendance last session; this year thirty-one—decrease the result of the scarcity of money."—Woman's Medical College of St. Louis.

[23] "The present is the ninety-eighth annual course of lectures at this college, and the number of students is the largest in its history. Causes: A hospital has just been

opened in town. Possibly the depression in general business may have some influence."—Dartmouth Medical College.

[24] "There is a decrease in the first year, due to the establishment of the four-years' course."—College of Physicians and Surgeons of Columbia College.

[25] "Not complete; return made November 1."—Albany Medical College.

[26] "The junior class of session of 1891 was the first under the graded system."—University Medical College of New York City.

[27] "Our collegiate year does not close until June, 1895, and we always have a considerable number entering our reading term in March—these will bring our number for 1894-95 up to 280 or more. This is the largest class we have ever had, and is undoubtedly due to the clinical advantages we offer."—Long Island College Hospital.

[28] "1890-91 was the last year of the two-years' system; 1891-92 was the first year of the *obligatory* three-years' system. The unusually large class of 1890-91 was due to the fact that many students intend to take advantage of the two-years' system. In 1891-92 three courses of lectures were made obligatory. Students were required to pay for each course attended and the fees on lectures were raised from $140 to $150. *Unclassified* includes those who did not attend the full regular course." In the total 409 for 1894-95 are included 60 "unclassified," and in the total 407 for 1893-94 are included 85.—Bellevue Hospital Medical College.

[29] "Our four-years' course began with the session of 1893-94 and there are consequently no fourth year students as yet." The total third year students (thirty-four) include eight who are in the third year of the four-years' course.—Woman's Medical College of the New York Infirmary.

[30] "With the session of 1896-97 we will require a fourth year. It is now optional."—Med. Dept. Western Reserve University.

[31] "The increase seems to affect all schools, more or less, and is probably due to prospective enforcement of the four-years' course next year."—Starling Medical College.

[32] "Increased facilities for instruction over years gone by have increased our class from thirty-eight the past season to fifty for the present."—Toledo Medical College.

[33] "The increase is due largely to the reputation of the school among college-trained students and school teachers. Our school is conducted on the normal methods of teaching. The students are enthusiastic and spread the good news to their friends seeking a medical education."—Ohio Medical University.

[34] "Increasing good reputation of the school and perhaps because of lack of opportunities for employment on account of times has driven more persons than usual to professional study."—Med. Dept., University of Oregon.

[35] "The total number in attendance this year (session of 1894-95) may be increased by about thirty when students at present under conditions are permitted to matriculate after their conditions are passed."—Med. Dept., University of Pennsylvania.

[36] "Partly due to the fact that we begin our compulsory four years' course next year. Any progressive movement like this increases the popularity of the school as it indicates a determination to take a higher stand among the medical colleges."—Jefferson Medical College.

[37] "The recent reduction in the number of students was probably due to the lengthening of the course of study to four years and the advance in the standard of entrance requirements adopted by the college."—Woman's Medical College of Pennsylvania.

[38] "The great clinical advantages by reason of its proximity to a large general hospital, viz.: The Western Pennsylvania Hospital. This and the fact that we have adopted the three-years' graded course explains the increased attendance."—Med. Dept., Western University of Pennsylvania.

[39] "Our facilities for teaching are being yearly increased and an increasing number of students are in attendance."—Medical College of the State of South Carolina.

[40] "We now have a four-years' course of study."—Meharry Medical College.

[41] "The decrease is owing to the stringency in money matters all over the country."—Tennessee Medical College.

[42] Heretofore conducted as a spring and summer school, not graded. "The school has now withdrawn from the Southern Medical College Association and will teach annual terms of ten months, from first of March to latter part of December, and permit students to apply for graduation after attendance upon two such annual terms and three years of study." —Sewanee Medical College.

[43] "We have no required third year, but some students distribute their study over three years." Two annual sessions of nine continuous months each are required for graduation. "The increase of students is due to the establishment of the graded course."—University of Virginia.

[44] "We have ten State scholarships, given in consideration of the fact that we receive aid annually from the State. We have no other scholarship feature, as is so often found in other medical institutions, or our number of matriculates would have been greatly increased. We have no dental or pharmacal department connected with our school. It is proper to state that the number of students above for session 1894-95 is incomplete, as we expect a number more to come in soon."—Medical College of Virginia.

[45] "During the last session the qualifications for degree were increased from four six months' sessions and two compulsory summer sessions of three months each, to four sessions of nine months each. The increase in students was unexpectedly large this year which we attribute chiefly to the increased clinical advantages afforded from the opening of the new Royal Victoria Hospital."—Faculty of Medicine, McGill University.

[46] "The increase during the present session is probably due: 1, to the fact that the enlargement of the building last summer, increasing it to double its former size, was well advertised throughout the Province: 2, the work of the college is becoming favorably known; 3, the proportion of young men entering the profession in this section of the country, as shown by increasing attendance, is rapidly (too much so, possibly), on the increase; 4, it has become generally known that it is the intention of the college to lengthen the term. This has had the effect of bringing a few students in earlier than they would otherwise have come."—Manitoba Medical College.

NECROLOGY.

DUJARDIN-BEAUMETZ, M.D., of Paris, at Nice, France, February 15, aged 61. He was physician to the Hôpital Cochin and a well-known writer on therapeutics. He had many friends among the medical profession of America, and was a member of the Ninth International Medical Congress at Washington, 1887.

CHAS. W. BREYFOGLE, M.D., who was for several years a leading physician of Louisville, died at his late residence, San Jose, Cal., on the 28th ult. He was 54 years old, was born in Columbus, Ohio, lived in Louisville, and in 1872 moved to San Jose on account of ill health.

SIR WILLIAM SCOVELL SAVORY, F.R.S., Surgeon Extraordinary to the Queen, and late President of the Royal College of Surgeons died in London, March 4, aged 69 years.

JOHN CAMPBELL THOMPSON, for many years a practitioner at South River, N. J., died February 14, in his sixty-seventh year. He was a graduate in medicine at the College of Physicians and Surgeons in the class of 1856.

MILTON N. TAYLOR, M.D., of Baltimore, died February 25, aged 68 years. He was a native of that city and a graduate in 1848 at the Washington University School of Medicine, since merged with the College of Physicians of Baltimore. He was connected at odd times, from the year of his graduation, with the administration of health affairs. He was the City Physician in 1853 and 1854 and a Commissioner of Health from 1867 to 1871.

T. S. HOLLINSHEAD, M.D., of Harrisburg, Pa., February 25——J. F. Parks, M.D., Bourbon, Ind., February 28.——A. J. Bell, M.D., Atlanta, Ga., February 23.——I. de Zouche, M.D., age 72, Gloversville, N. Y., February 22.——Francis Obetz, M.D., Grove City, Ohio, February 20.——W. D. McWhorter, M.D., Washington, D. C., February 20.——A. J. Robb, M.D., Owosso, Mich., February 26.——J. H. Sherrod, M.D., Paoli, Ind., age 52 years, February 26.——Grace Danforth, M.D., Granger, Texas, February 21.——I. M. Ward, M.D., Lyons Farms, N. Y., age 89 years, February 25.——Ben Smith, M.D., Mount Upton, N. Y., February 23.——L. S. Henthorn, M.D., Indianapolis, Ind., February 25.——W. H. Scobey, M.D., Hamilton, Ohio, February 27.

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SATURDAY, MARCH 9, 1895.

SOURCES OF ARROW POISON.

Commenting on LEWIN'S work on arrow poisons (*Die Pfeilgifte*) LAGNEAU observes that many of the European peoples in ancient times employed poisoned arrows, but most authors who mention the fact neglect to state the mode of preparing the poisons. Some of these appear to have been composed of vegetable extracts of great toxic power, and others of venoms or putrified animal matters, undoubtedly containing ptomaines.

The Gauls, according to PLINY, dipped their arrows for the chase in the juice of hellebore: "*Galli sagittas in venatu elleboro tingunt.*" (Hist. Nat., lib. XXV.) He also speaks of an herb called *limeum* by the Gauls, from which they made a preparation which they called "poison of the deer:" "*Limeum herba appelatur a Gallis, qui sagittas in venatu tingunt medicamento, quod venenum cervarium vocant.*" (Hist. Nat., lib. XXVI.) STRABO and ARISTOTLE also mention poisoned arrows for hunting used by the Celts. The Scythians, according to OVID, then in exile on the shores of the Black Sea, coated their arrows with the gall and blood of the viper—more probably its venom. Different Greek authors also speak of the viper as being used to poison arrows, but ARISTOTLE notes that the Scythians add human blood—*ἀνθρωπον αἱμα*—to the viper venom. "When this blood is equally putrified," says ARISTOTLE, "the serous liquid which rests on top is mixed with the putrid viper and thus they make a mortal poison." (*De Mirab. Auscult.*, cap. CXLI.)

LEWIN states that among the Somali of Northeast Africa a blackish material called *waba* is used; this is extracted from plants of the *Apocynaceæ* and is identical with amorphous ouabain. Among the Waitata of Central Africa the poison more nearly resembles crystallized ouabain. Other Central African tribes, the Waschamba, Wanika, etc., like the Somali, use amorphous ouabain. The peoples of South Africa possess modern arms, using poisoned weapons only exceptionally, so that in the near future these tribes will have lost the art of weapon poison. In the rest of Africa the poison used is sometimes ouabain, sometimes strophanthin, sometimes a mixture of the two.

In Asia, aconite seems to be preferred to other poisonous substances. During the French war with Tonquin in 1878, REGNAULT showed that the natives used a cardiac poison extracted from the *Antiaris toxicaria*. Many soldiers were wounded with weapons thus poisoned—in one skirmish a lieutenant and two privates, but only one of these had dangerous symptoms.

TREATMENT OF PENETRATING WOUNDS OF THE CHEST.

In the *Revue de Chirurgie*, for Jan. 10, 1895, there appears an interesting article on the conduct of the surgeon, in the case of penetrating wounds of the chest by side arms, by HUGUET and PÉRAIRE, who quote numerous observations by TERRIER and LUCAS-CHAMPIONNIERRE, and by themselves.

The code duello is so much in vogue in France that even in the "piping times of peace," there is abundant opportunity for the study of this class of wounds.

The authors make very clear by their observations that early removal of such patient from the field is extremely dangerous, unless every precaution be taken to immobilize the chest wall as far as possible. The following is a summary of their conclusions:

1. There is absolute necessity of treating the wounded, at the place; the gravity of the concussion communicated by transportation, whether the journey is long or short, gives even stronger reason, as treatment may be performed in the carriage. If it is necessary to transport the wounded to a distance the inevitable jolting of the vehicle will produce hemoptysis or accentuate it, and this may induce the death of the patient.

2. The state of syncope favoring hemostasis may be respected in a certain degree, but it may become necessary to make moderate subcutaneous injections of ether, to the end that the depression may not become too considerable. It is in such cases that above all we may have recourse to caffein and to hypodermatic injections of artificial serum.

3. The treatment of penetrating wounds of the chest by ordinary means (cold applications and iced drinks, injections of ergotin, compression, antisepsis, ligature of vessels, suturing of the wound) appears to us insufficient in many cases, unless immediately subjected to as absolute immobility as possible. Thanks to this absolute rest which results from forced immobilization of the entire pulmonary apparatus, there is obtained a condition from the outset which alone may insure success.

4. It goes without saying that this immobilization does not exclude the ordinary means mentioned.

5. In case of hemothorax consecutive to a lesion of a great vessel, there is no urgent need, the phrase "*expectation armée*" (armed neutrality) never finds a better application than in such circumstances. It is necessary to be guided by the symptoms and above all by the complications, to come to a determination. It is not necessary to resolve upon thoracentesis until the effusion becomes too considerable, and the dyspnea excites serious fears for the case.

6. The indication is in all cases of penetrating wounds of the chest to banish the permanent dressing; to make an elaborate dressing of the wound, being restricted to the necessities of the case, and always avoid jolting or concussions.

The treatment recommended must commend itself to all military surgeons, notwithstanding this subject has furnished food for discussions from time immemorial.

THE forty-sixth annual session of the AMERICAN MEDICAL ASSOCIATION will be held in Baltimore, Md., on Tuesday, Wednesday, Thursday and Friday, May 7, 8, 9, and 10, commencing on Tuesday, at 10 A.M.

SANITARY EXPENDITURE PAYS.

At the recent Indian Medical Congress—the first, by the way, in the annals of Indian medicine—SURGEON-LT-COL. W. G. KING, D. P. H., delivered the Presidential address on Public Health, in which he pointed out that during the last six and a half years 201,394 deaths were registered from smallpox in the Madras Presidency. Taking into account the probable number of survivals from these attacks at 64.3 per cent., he calculated that—without considering the capitalized value of lives—there must have resulted, during sickness and upon funeral ceremonies, an unproductive expenditure of 51 lakhs of rupees—if it be presumed that the persons attacked occupied no higher position than the coolie gaining Rs. 5 per month. Translated from East to West, in terms of currency, this means that a sum equivalent, in round numbers, to about $48,000,000 was wasted in six and a half years through a preventable disease—to say nothing of the suffering, the disabilities of the survivors and the loss of human life.

On the other hand, one day last week the municipal authorities of Chicago dedicated, with appropriate ceremonies, what is known as the "four-mile crib." This is a structure covering the intake of an eight foot tunnel running out into Lake Michigan a distance of four miles from the city, with a daily capacity of 140,000,000 gallons, taken from the lake at a point beyond the observed limit of shore pollution. As a matter of fact the tunnel has been in operation since December, 1892—a period long enough to furnish some interesting data concerning its effect on the death rate from typhoid fever and the diarrheal diseases. The Health Commissioner, DR. REYNOLDS, showed that during the three years from Jan. 1, 1890, to Dec. 31, 1892—about which latter date water was first let into the tunnel—Chicago had an average annual death rate from typhoid fever of eleven and one-half in every 10,000 of population. In 1893—that is, during the first year's duty of the tunnel—this rate was reduced to four and one-fifth in 10,000, and last year it was still further reduced to three and one-tenth in 10,000. Up to the close of 1892, Chicago had, year after year, the greatest typhoid death rate of the seventeen principal cities of the Union—all those having populations of 200,000 or over. In 1894 the city had moved up from the lowest to the tenth place in the scale of healthfulness in this respect, with a rate of 3.1 in 10,000, being outranked by New Orleans (3.0), Milwaukee (2.5), Boston (2.4), Cleveland (2.2), New York (1.6), and Brooklyn (1.5), and outranking Philadelphia (3.3), St. Louis (3.5), Minneapolis (4.6), Baltimore (4.8), Louisville (5.0), Cincinnati (5.2), Pittsburg (5.6), Buffalo (5.7) and Washington (8.1).

It was further pointed out that while the greater or lesser prevalence of typhoid fever is generally accepted as an indication of the character of the water supply, it is by no means the only disease whose prevalence is increased by impure water. The diarrheal diseases are similarly affected, and these cause in the aggregate a larger number of deaths than typhoid. In the four years, 1890–93 inclusive, there were 7,803 deaths in Chicago from the diarrheal diseases—a yearly average of 1,951. In 1894 there were only 809 deaths from these causes—a reduction of over 58 per cent. If the same death rate had obtained from typhoid fever and the diarrheal diseases in 1894 that obtained in 1890, '91, '92 and '93, there would have been 2,153 more deaths from these causes than there really were. Accepting the capitalized value of a human life at $5,000—an estimate which is indorsed by the Legislatures of many States in fixing the penalty upon railroads for killing people outright—this would give an aggregate of $10,765,000 saved as against the cost of the tunnel construction and pumping plant ($3,083,000), leaving a balance of $7,682,000 to the credit of an improved water supply over and above its cost.

In this computation, however, no account is taken of a still larger factor of cost. Each death from typhoid represents, probably, twenty cases—nineteen of whom recover and are never mentioned in statistics; each death from the diarrheal diseases similarly represents probably forty cases—say an average of thirty cases to every reported death. If, then, an improved water supply prevented 2,153 deaths from these diseases, it also prevented nearly 65,000 cases of these diseases, and has also saved their aggregate cost of medicines, medical attendance and nursing, of time taken from business or productive work, and

of expenses of many other kinds incident to the sick room.

Sanitary expenditure pays, whether in vaccinating against the smallpox or in providing a pure water supply. That is to say, it pays the community, whatever may be its effect on the income of the practitioner.

EXACT ENGLISH AND PURE WATER.

Although REPRESENTATIVE BARTHOLDT'S efforts to secure the passage of a bill—to appoint a commission for the investigation of the pollution of water supplies where such pollution affects or threatens to affect the sanitary condition of the people of more than one State—failed at the session of Congress just closed, it is to be hoped that he will renew the attempt at the earliest opportunity and push it to a successful conclusion. The subject matter is one in which every sanitarian is interested and the moot questions involved should be promptly and authoritatively settled. Meanwhile, the agitation has not been without result, since the text of the measure has furnished occasion for an excursus upon the exact use of language which the JOURNAL thinks may be profitably reproduced.

Commenting editorially upon the bill, an esteemed contemporary had this to say: "One of the sections provides that 'at the next session of Congress the commission shall submit such suggestions as may seem desirable for the purpose of remedying any insanitary conditions that may have been developed by its work.' Surely this is not what the framer of the bill meant, for he can hardly intend that the commission shall go into the business of developing insanitary conditions; he has simply lapsed into 'sloppy English.'" To which the framer of the bill, DR. CHARLES SMART, Surgeon, U. S. A., responds that this is precisely what he meant and intended. "The transitive verb *develop* means to take a thing out of the wrappings or obscurities in which it is enveloped. The thing referred to is in existence, but it is not apparent until its existence is developed by some agency. It may be intangible—an idea, for instance; but the existence of the idea may be developed by the use of words spoken or written. It may be invisible, as is the photographic picture, which can be seen only after it has been developed by certain chemic solutions; or it may be a very material and substantial thing, as a hostile army in line of battle, the position of which may be developed by reconnoitering parties. The first two illustrations are analogues and the last is the homologue, from the literary standpoint of 'the insanitary conditions which may be developed' [*Synonyms:* uncovered; unfolded; laid open; disclosed; exhibited; unraveled; disentangled; detected.—*Webster.*] by the labors of a commission of competent investigators.' Some persons, through ignorance or carelessness, use the word in the sense of to produce or to cause to come into existence, Against these the charge of lapsing into slovenly English may be preferred with justice, but certainly not against those who give the word its true value."

All of which goes to show that Analyst SMART is no less doughty a champion of English undefiled than of water unpolluted.

THE TRIUMPH OF M. PÉAN.

The session of the Academie de Medicine of Paris held January 15, was made remarkable by the presentation of a patient by M. PÉAN.

This patient had had a carcinoma of the larynx and to relieve it, it was necessary for M. PÉAN to make entire extirpation of the larynx, the superior portion of the esophagus and the inferior portion of the pharynx. Not only did the patient support the mutilation, but by means of a prothetic apparatus constructed by M. MICHAËLS, under the direction of M. PÉAN, the organs were replaced so that the patient could breathe, eat and drink. Not only that, but the apparatus allowed the patient to make articulate sounds, so that speech could be understood. It is two years since the patient was operated upon, and the crowning glory of the operation has been the phenomenal, nay, the brilliant success of the artificial larynx. In former times the saving of the life of a patient so afflicted would in itself have been a triumph of surgery, but to replace lost parts with apparatus of such delicacy and usefulness seems to represent an art almost superhuman.

HENRI DE MONDEVILLE.

In a scholarly article by DR. ADRIAN SCOTT in the *Atlantic Medical Weekly*, March 2, 1895, we note the following:

"The oldest French writer upon surgery is HENRI DE MONDEVILLE, at first teacher in Montpellier, then body surgeon to PHILIP THE FAIR. He was at the same time one of the earliest French writers upon anatomy, the instructor of CHAULIAC. His 'Chirurgie' has never yet been printed."

This is an error, for the Chirurgie of MASTER HENRI DE MONDEVILLE was published last year. In our issue of April 28, 1894, we published a leading article on the work, and complimented the editor, M. NICAISE, on his great public service in rescuing DE MONDEVILLE'S work from the obscurity in which it had so long remained.

If DR. SCOTT had read this JOURNAL carefully he would not have fallen into the serious error which we have noted.

THE DATE OF THE ASSOCIATION MEETING.

By an unfortunate error in the publication of SECRETARY ATKINSON'S circular, the date was given as June. The actual date is May 7, 8, 9 and 10.

There need be no confusion if one will always remember that for many years the rule has been that when the ASSOCIATION meets south of MASON and DIXON'S line, the meeting is invariably held in May; when north of that line in June.

CORRESPONDENCE.

A Warning against Castration for Prostatic Enlargement.

CHICAGO, Feb. 25, 1895.

To the Editor:—Permit me to utter through your columns a warning against promiscuous castration for prostatic enlargement. The operation is so easy and the relief afforded sometimes so great, that some seem to have forgotten the existence of other means to the same end. In several of the nineteen cases already reported, it would seem that complete relief should have been afforded by a simple incision, or simpler puncture, or perhaps even by a catheter in a practiced hand.

The interesting analogy between uterine myoma on the one hand, and one element in prostatic enlargement on the other, has obscured to some of us the other element in this enlargement, the *inflammatory;* which while playing no rôle in uterine myoma, is the important clinical factor in all severe cases of prostatic hypertrophy.

I hope to discuss this element at length in another place, and to show that a process which I call "milking the prostate" is an efficient measure for the relief of prostatic enlargement; at present, I shall merely mention the admitted facts that suppuration in the prostatic glands (prostato-cystitis) occasions the patient acute distress, and that inflammation in the parenchyma results in the edema and connective tissue hypertrophy which constitute much of the enlargement. That castration may cause atrophy of glands, subsidence of edema and hence relief of distress is admitted; but that it will not reduce the hypertrophied connective tissue is *a priori* probable and seems proved by at least two of the cases already reported.

If the argument were ended here, the relative merits of castration and incision might be debatable; but there is another feature which, in my opinion, makes castration as the operation for the relief of prostatic hypertrophy dangerous to the surgeon namely, the impossibility of knowing that the cystitis is due to the apparent hypertrophy. It is well known, for example, that prostatics very often have vesical calculi which may indeed be the chief cause of suffering; and that in such bladders calculi may easily escape detection by the sound because concealed by the projecting prostate or in diverticula. I emphasize this fact because there have come to me within six months, two elderly patients suffering from prolonged and severe cystitis ascribed to the undoubtedly swollen prostates, each of whom had been urged by his physician to submit to castration. Careful search with the sound revealed a calculus in one, but failed to detect in the other a small stone which was found by supra-pubic incision lying below the swollen prostate. Prolonged vesical drainage was followed by great reduction of the prostatic enlargement (evidently inflammatory) and a symptomatic cure. Imagine the status —professional and legal—of the surgeon who might have castrated either of these men, when the calculus was subsequently discovered.

A mistaken diagnosis of simple prostatic enlargement—because this is a common cause of severe cystitis—is sometimes made when the real trouble is a less familiar condition, such as cancer, papilloma, tuberculosis, or concealed stone. It seems to me therefore that whenever a case of real or supposed prostatic enlargement demands operative relief, this should always be an incision into the bladder; castration, if it have any place at all, must compete with prostatectomy and not with simple incision which, in the interest of surgeon as well as patient, should precede it. The claim that double castration is safer than drainage is not, in my experience, warranted, if drainage be made by either perineal urethrotomy or supra-pubic incision in *deux temps;* the danger in cases that really demand operative interference is the anesthetic, not the knife.

WM. T. BELFIELD, M.D.

Treatment of Gonorrheal Conjunctivitis.

MINNEAPOLIS, MINN., Feb. 23, 1895.

To the Editor:—Two recent cases of conjunctivitis have interested me and are perhaps worth publishing. Jan. 7, 1895, Dr. B. asked me to visit and take charge of a case of purulent conjunctivitis, to which he had been called during the night. A young bride of two weeks, a healthy blonde, had suffered for four days from a profuse muco-purulent discharge of left eye, for which she had used some domestic eye wash and warm fomentations. Dr. B. had been called on account of severe pain which was relieved by morphia and hot water. I found intense congestion of entire conjunctiva, pupil strongly contracted, and a muco-purulent discharge which under the microscope showed only a few pus cells and streptococci, some of the latter in pairs. The eye was thoroughly washed out with boracic solution, mopped with 2 per cent. silver and again flushed with boracic solution. A single drop of 4 grains solution atropia was instilled, and the eye was flushed every fifteen minutes during the day. In eight hours it was much better. The two following days 1 per cent. silver was applied. There was almost no discharge. The fourth day the eye was white, slightly sticky in the morning, but free from irritation, and in a few days more entirely well. There was nothing beyond a slight occasional leucorrhea which could be suspected of being a causative factor.

Jan. 12, 1895, Dr. X., a professional friend, came to my office with what appeared a purulent conjunctivitis of both eyes. His eyes were well in the morning, but at 3 P.M., I found a profuse purulent discharge, with intense congestion of conjunctivæ. The eyes were thoroughly washed out with boracic solution, mopped with 2 per cent. silver, again flushed, and this repeated about three hours later. Iced cloths were kept constantly applied until the following morning when the discharge had nearly ceased. The 2 per cent. silver was again applied, and the boracic solution at frequent intervals during the day. On the second morning the eyes were free from discharge and practically well, there being only a few subconjunctival ecchymoses and a yellowish discoloration, with some feeling of stiffness. The microscope showed as characteristic evidence of the gonorrheal nature of the pus as I have ever seen in unquestioned cases.

Dr. A. F. Irwin, Professor of Pathology at the College of Physicians and Surgeons, to whom I submitted the microscopic slide, concurred in my diagnosis. In neither of these cases could the nasal condition have played any special causative part. In the one there was a mild intumescent rhinitis; in the other the atrophic stage of hypertrophic rhinitis. In the latter case, a profuse nasal discharge began and ended with the conjunctival discharge, being evidently secondary.

The first case was probably a streptococcus infection. The second, I am confident, was of gonorrheal origin. My treatment of any acute conjunctivitis is usually introduced by an application of 2 per cent. silver. It is by common consent the proper thing if the case be purulent, and in my opinion the earlier the better. If the case be catarrhal the indication may be less imperative, but it is equally clear.

Yours respectfully,

EDWARD J. BROWN, M.D.

THE forty-sixth annual session of the AMERICAN MEDICAL ASSOCIATION will be held in Baltimore, Md., on Tuesday, Wednesday, Thursday and Friday, May 7, 8, 9 and 10, commencing on Tuesday, at 10 A.M.

An Inquiry.

COLUMBUS, OHIO, Feb. 26, 1895.

To the Editor:—I desire to inquire of those among your readers, who have had experience in neural infixation, to give me the following information, for which I will be pleased to give them due credit.

Date and number of cases operated; cause for operation; method of operating, naming the nerve infixed as well as the nerve in which the implantation was made, also the point at which such infixation was made.

My object is to gather reliable statistics in this class of surgery with a view of obtaining more light on this important subject. Very respectfully yours,

R. HARVEY REED, M.D.

150 E. Broad Street.

[Exchanges please copy.]

Florida Health Notes.

PHILADELPHIA, Feb. 24, 1895.

To the Editor:—I noticed in a late issue of the JOURNAL, that the *Florida Health Notes* will publish a series of papers on "Cremation," beginning with January, 1895. I have been trying to find out the address of the said periodical but did not succeed; hence I write to you to kindly give me same on a postal, as you certainly have copies from which the extracts are taken. Many thanks for your kindness.

Respectfully,

REV. E. H. GERHART.

ANSWER:—Address, Dr. J. Y. Porter, Secretary State Board of Health, Jacksonville, Florida.

Expelled.

CLEVELAND, OHIO, Feb. 24, 1895.

To the Editor:—Please publish in our JOURNAL, the following resolution as adopted by the medical staff of the German Hospital of this city, viz:

"*Resolved*, That Dr. F. D. Brandenburg be hereby expelled from this staff for unprofessional conduct, *i. e.*, the giving of a fulsome certificate to the proprietor of a certain mineral water under the name of this staff, without their knowledge or approval, and which certificate we hereby repudiate."

Yours respectfully,

F. W. WALZ, Secretary.

ASSOCIATION NEWS.

The Baltimore Meeting.

At a meeting of the Committee of Arrangements held February 26, the Committee of Transportation reported that the various railroads of the country had granted the customary reduction of rates to one fare and one-third on the certificate plan to the delegates attending the meeting, and their families. The Secretary of the ASSOCIATION will publish detailed instructions for obtaining this reduction, through the columns of the JOURNAL.

Hotel rates to delegates will be given in the next issue of the JOURNAL. The Hotel Stafford will be the headquarters of the ASSOCIATION.

Among the entertainments determined upon will be an evening reception by the Trustees of the Johns Hopkins Hospital. A general entertainment will also be given by the profession of the city, but the details of this are not yet completed.

Excursions at greatly reduced rates will be arranged to the Gettysburg battlefield, to Washington and to Annapolis. Further details of these excursions will be given in future issues of the JOURNAL.

An auxiliary committee of ladies will have in charge the entertainment of ladies accompanying the delegates during the hours when the latter are occupied at the meetings.

The Committee urges Section officers to arrange for the Section dinners on the evening of the first day (Tuesday) in order not to conflict with the arrangements for the general entertainments on Wednesday and Thursday evenings.

The Committee feels that the primary object of the meeting of the ASSOCIATION is the transaction of scientific work, and that diversion and entertainment must be held subordinate to this. Hence no encouragement will be given to any suggestions looking to abridge the time to be devoted to scientific work and the legitimate business of the ASSOCIATION. The Committee hopes, however, to make the visit of the members, the delegates, and their families, agreeable as well as profitable. It is the earnest wish of the profession of Baltimore that no one coming to the meeting will leave our city with the feeling that his time has been wasted or unpleasantly spent. GEORGE H. ROHÉ,

Secretary Committee of Arrangements.

American Medical Association Annual Announcement.

OFFICE OF THE PERMANENT SECRETARY,
1400 Pine Street, PHILADELPHIA.

The forty-sixth annual session will be held in Baltimore, Md., on Tuesday, Wednesday, Thursday, and Friday, May 7, 8, 9, and 10, commencing on Tuesday, at 10 A.M. Railroad rates one fare and one-third for round trip tickets.

"The delegates shall receive their appointment from permanently organized State medical societies, and such county and district medical societies *as are recognized by representation in their respective State societies*, and from the medical department of the Army and Navy, and the Marine-Hospital Service of the United States.

"Each State, county, and district medical society entitled to representation shall have the privilege of sending to the ASSOCIATION one delegate for every ten of its regular resident members, and one for every additional fraction of more that half that number: *Provided*, however, that the number of delegates for any particular State, Territory, county, city, or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the Code of Ethics of the ASSOCIATION."

Members by Application.—Members by application shall consist of such members of the State, county, and district medical societies entitled to representation in this ASSOCIATION as shall make application in writing to the Treasurer, and accompany said application with a certificate of good standing, signed by the president and secretary of the society of which they are members, and the amount of the annual subscription fee, $5. They shall have their names upon the roll, and have all the rights and privileges accorded to *permanent members*, and shall retain their membership upon the same terms.

The following resolution was adopted at the Session of 1888:

That in future, each delegate or permanent member shall, when he registers, also record the name of the Section, if any, that he will attend, and in which he will cast his vote for Section officers.

Secretaries of medical societies, *as above designated*, are earnestly requested to forward, *at once*, lists of their delegates.

AMENDMENTS TO THE CONSTITUTION AND BY-LAWS.

[Offered in 1892, and laid over from 1893 and 1894.]

Offered by Dr. C. A. L. REED—Amend Article II, Section 1, of the Regulations, by inserting after the words United States, "the Dominion of Canada, Labrador, and Newfoundland," and that such other changes be made in the phraseology of the Regulations and By-Laws as to make the same conform to this contemplated enlarged jurisdiction of the ASSOCIATION."

By DR. I. N. QUIMBY—"That Thursday morning's general session be omitted, and the time be devoted to sectional work."

By DRS. JOHN MORRIS and J. G. KIERNAN.—Amend Section 7 of the Constitution, entitled, "the General Business Committee," as follows: "It shall be the future duty of the General Business Committee to make and present the nominations for the officers of the ASSOCIATION and its standing

committees, and recommend the time and place for the meeting of the ASSOCIATION.

"The General Business Committee of the ASSOCIATION shall perform all duties hitherto performed by the Committee on Nominations, which is hereby abolished. All sections of the Constitution and By-Laws, or parts thereof, inconsistent with the amendment, are hereby repealed."

By DR. F. F. DOW—Amendment to the Constitution, to be known as Article VIII, entitled: "The Code of Ethics:" "The relations of the physician to the patient, to the public, and to the profession require that he shall be of good moral character, and in his personal and professional conduct without reproach; that he shall avoid pretense and notoriety; that he shall properly qualify himself for professional duty by broad and liberal studies in letters, sciences and arts; that he shall employ reasonable and reputable methods of practice; that he shall respect the laws of the State; that he shall encourage efficient means for the enlightenment of public opinion regarding the responsibilities of medical men and the relation of the citizen to public health, for the cultivation of medical education, for the promotion of the interests, usefulness, and honor of the profession, for the emulation, concerted action, and friendly intercourse among those engaged in it.

"Substituting the Roman numerals IX for VIII.

"All Articles, By-Laws, and Codes inconsistent with this amendment are hereby repealed."

By DR. J. H. RAUCH—"That on and after July 1, 1897, no one will be admitted to membership in the AMERICAN MEDICAL ASSOCIATION who has not studied medicine for four years, and attended four annual courses of lectures of at least six months' duration."

By DR. F. F. DOW—Amend By-Law No. XI, relating to the Judicial Council. The second clause of paragraph 3 shall be amended to read as follows: "The decisions of said Council on all matters referred to it by the ASSOCIATION shall be reported at the earliest practicable moment, and shall be final unless revised by the ASSOCIATION."

By DR. A. B. HOSMER—"WHEREAS, The constantly increasing number of papers on general surgical subjects presented each year at the Surgical Section of this ASSOCIATION, the reading and even restricted discussion of which prohibit the introduction of any considerable number of papers on strictly orthopedic subjects, which might not prove of universal interest to the general surgeon; and

WHEREAS, There are already a sufficient and rapidly increasing number of members of the Surgical Section of this ASSOCIATION especially interested in this branch of surgery to warrant it; therefore be it

"*Resolved*, To amend Article II of the By-Laws by the addition, under the heading Sections, and after 12, Physiology and Dietetics, the following; 13, Orthopedic Surgery.

By DR. J. T. PRIESTLEY—"The entire report on Constitution, etc., as offered in the report of Dr. Holton at San Francisco."

ADDRESSES.

On General Medicine, by Dr. William E. Quine, Chicago, Ill.; on General Surgery, by Dr. C. A. Wheaton, St. Paul, Minn.; on State Medicine, by Dr. H. D. Holton, Brattleboro, Vt. Committee of Arrangements, Dr. J. J. Chisolm, Chairman, Hotel Stafford, Baltimore, Md.

All members of the ASSOCIATION, and members of the medical profession generally, are urged to attend the Baltimore meeting.

WILLIAM B. ATKINSON, Permanent Secretary.

PUBLIC HEALTH.

Tenement-Houses Must Have Adequate Water Supply.—The New York City Board of Health has recently won a victory in the Court of Appeals over the rich and powerful Trinity Church corporation. The fight has been waged for years with varying success, but it seems that the court of last resort has given the right of way to the Health officers. The following is a paragraph from a telegram dated February 26:

"The church corporation neglected to furnish water on each of the floors of the buildings 77 and 84 Charlton Street and after the Health Department had ordered them to put the water in neglected to do so. The Department fined them $200 at $10 a day for every day of neglect after the order was issued. The church trustees contended that the houses were not tenements, but were built for residences, and although used as tenements now, did not come under the provisions of the act. The case was decided in favor of the city, and judgment of conviction, entailing a fine of $200 issued. The church corporation asked for a new trial on questions of law and the General Term granted it. The Court of Appeals reverses the decision and denies the new trial."

Neglect of Vaccination in Italy.—During the recent smallpox incidence, it was noted that an undue proportion of cases occurred among the Italian contingent of the population. The experience of Dr. James Leishman, surgeon of the steamer *Scandia* of the Anchor Line, throws some light on the cause. He says: "In 1894 I examined over eight hundred Italian emigrants for vaccination according to American law. I regret I did not retain exact figures of results, but many men even of military age had somehow escaped, and more women, while fully half of the children had no marks. On my last voyage, out of 100 children I had to vaccinate over 60. The figures would be more unfavorable if I could subtract those vaccinated just previous to the voyage and those who preferred doing it at home. I was more than surprised to find it is supposed to be universal. These were mainly peasants from the southern half of Italy. While I am writing, I may say that Scandinavians are very carelessly vaccinated, many who have certificates showing no marks; Scotch are rather better, German and Irish are far superior and practically perfect. The Italian lymph is excellent. Other ship surgeons I have no doubt could corroborate me."

Health of Paris.—The last official census of the French capital was that of 1891, which fixed the population at 2,424,705, the figures still quoted in the issues of the *Bulletin Hebdomadaire de Statistique Municipale* for 1894. Based on this population, the mortality last year was lower than the average mortality of the previous ten years, being at the rate of 20.20 per 1000 of population. On the same census figures, the death rate for 1891 was 21.55; for 1892 it was 22.49, and for 1893 it was 21.83 per 1000. Since there was an increased birth rate in 1894, this lowered death rate can not be due to loss of population, and the actual number of deaths shows that Paris was unusually healthful in 1894. Last year 48,992 deaths were registered; in 1893, 52,955; in 1892, 54,536; in 1891, 52,262; in 1890, 54,566; in 1889, 54,083. Thus in 1894 the mortality is 4,725 lower than the average. With the exception of short epidemics of typhoid fever and of smallpox, these forms of disease were rare during 1894—during the last six months especially so. The deaths from typhoid fever in 1894 were 695; in 1893, 570; in 1892, 692; from smallpox, 173 deaths in 1894, 260 in 1893. Measles caused most deaths during May; afterward the cases were quite exceptional in 1894; the deaths were 988; in the previous years they were 677 and 909. Scarlet fever 149, the previous years 177 and 158. Whooping-cough 248 instead of 508 and 334. Diphtheria 1,009, instead of 1,266 and 1,403. Deaths from lung diseases were considerably less, and notably contributed to the lowering of the death rate.

Transportation of Contagious Disease Corpses.—A case was recently tried before Judge Abner Smith in the Circuit Court of Cook County, Illinois, in which suit was brought against the Chicago and Northwestern Railway Company to recover damages for refusal to carry the dead body of plaintiff's child, the child having died of diphtheria. At the time the corpse was offered, Dec. 26, 1891, the rules of the State Board of Health of Illinois permitted the transportation of corpses of persons dead of diphtheria under certain regulations, placing them in the second class mentioned in the rules. About a year previous to that time the State Board of Health of Iowa and those of several other Western States

changed diphtheria and placed it in the first or prohibited class, so as to forbid absolutely the transportation in public conveyances of bodies of persons dead of diphtheria. When that change was made, the company, as it had lines in many of the States, changed its rules to correspond with the change made by those Boards of Health, and, as a result, at the time the body of the plaintiff's child was offered for transportation the rule of the company forbade its transportation, although such transportation was permitted by the rules of the Illinois State Board of Health. The plaintiff claimed as damages the expense of transportation by carriage from Chicago to De Kalb, Ill., and the extra expense of preparing the corpse for transportation, in all some $60. The facts being admitted, there was only a question of law involved, and that was—Whether the rule of the company forbidding the transportation of such a corpse was a reasonable one. Judge Smith held, as a matter of law, that it was a reasonable rule which the company had a right to make and enforce, and therefore the plaintiff had no right to recover damages.

Contagious Diseases.—The actual extent of the smallpox in Hot Springs and elsewhere in the lower Mississippi Valley can only be surmised; the sole sources of information, in the absence of official reports, are the newspapers and these vary widely—one recent account says there has been only a single case in the popular sanatorium and that convalescent, while, within forty-eight hours after, another asserts that there were forty-one cases under treatment at the beginning of the month. Quarantines are rife in Arkansas and Texas and travel has been somewhat impeded in consequence. The disease continues to spread in St. Louis and is reported subsiding in Chicago, Milwaukee and throughout the territory north of the Ohio River.

Influenza, diphtheria, pneumonia and bronchitis have increased in prevalence and severity since the first of the month. In this country, however, none of the diseases—except, possibly, diphtheria—is so prevalent or so severe as in Great Britain and on the Continent. Especially as to influenza, which, it is asserted, was never so widespread in any previous epidemic. In London, doctors and nurses have been peculiarly stricken, so that it has been almost impossible to secure medical attendance. The New York *Sun* correspondent says that one of his neighbors suffering with the prevailing distemper was attended February 27 by a physician; the next day the physician was ill and sent a substitute; the third day a third doctor attended, because the second had fallen a victim; on the fourth day, a substitute of the substitute sent a substitute, because the first three were all in bed. An Associated Press dispatch of the 2d inst. says the statistics of the Sanitary Bureau of Berlin show that three-fourths of all the sickness in that city at present is due to influenza. It is noted that the complaint, which was at first of a mild character, has grown much more dangerous, and the number of deaths from influenza and its complications during the week has reached several hundred. In the Reichstag the usual attendance dropped to about forty, some one hundred and fifty members either suffering or recovering from an attack. The total number of cases in Berlin is estimated at from thirty to forty thousand. We have had nothing approaching these figures in any American city, although the death roll of "old age" has been largely swollen by the disease.

During the first month of 1895, Asiatic cholera was reported in Austria-Hungary, Belgium, Brazil, France, Germany, Holland, India, Russia and Turkey. There were reported during that time 3,471 cases and 1,893 deaths. Sanitary Inspector Cleary, M. H. S., writes, under date Rio de Janeiro, January 22 (*Abstract of Sanitary Reports*, March 1), that the disease appears to be drawing to a close in the original localities in Brazil and the Argentine States, but is extending farther into the State of Minas Geraes, and down the Parahyba River to the north and is now in the neighborhood of Sao Fidelis, near its mouth. "The authorities are very energetic, and intelligently apply proper disinfections, isolations and removals in all suspected cases, and I believe that it is in consequence of these measures that this town is not as yet afflicted with cholera." Dr. Cleary adds: "I have never known a summer here with so few cases of zymotic diseases as this one; among the shipping there are none."

BOOK NOTICES.

A Manual of Diseases of the Ear for the use of Students and Practitioners of Medicine. By ALBERT H. BUCK, M.D., Clinical Professor of the Diseases of the Ear, College of Physicians and Surgeons; Columbia College, New York; Consulting Aural Surgeon, New Yor kEye and Ear Infirmary, and the Presbyterian Hospital. Second revised edition, one volume, post octavo, 467 pages, illustrated, with blank memoranda pages at the back, extra muslin, price $2.50. New York: Wm. Wood & Company. 1895.

This edition of Buck's excellent manual on diseases of the ear is well adapted for the use of students and general practitioners. A new chapter entitled "Analysis of Symptoms" has been added, and the section on chronic purulent inflammation of the middle ear has been re-written. The new chapter on "Analysis" occupies fifteen pages and it will be found extremely useful in diagnosis. "The list of these symptoms," says the author, "is not very long; it comprises impairment of the hearing, subjective noises, the phenomenon of hearing better in the midst of noise, the sensation of something moving in the head when the head is moved, a sensation of fullness in the ear, unnatural resonance of one's voice in the affected ear, pulsation or throbbing, itching, soreness or pain, painful mastication, discharge from the outer canal, dizziness, numbness, and possibly one or two others."

In suppurative disease of the mastoid antrum, the author says: "In all cases of comparatively recent origin, we must not forget one well established fact, namely, that the majority of them will, in one way or another, get well without operation." He admits the frequent formation of fistulæ, and those accidents fatal to hearing which supervene on cases left to themselves, and he frankly admits that the chances of recovery without operation are very small in those cases where the cerebral complications are marked. In pyemic cases he considers operative measures urgent. Even in those cases of recovery without operation, convalescence has been so slow and tedious that operation would have been preferable. Explicit directions are given for trephining the mastoid antrum, and the author very properly, as we think, prefers the chisel to the trephine. He mentions after Macewen, accidents that have happened by improper or careless use of the chisel, such as hemorrhage from the sigmoid sinus, and rough fragments, both of which are to be avoided; the one by care and the other by the use of the rongeur to smooth the edges of the bony opening. The danger of opening the sinus in these cases is not so much from hemorrhage (for that may be easily controlled by gauze packing) but from septic infection direct from the abscess cavity.

Twentieth Century Practice; an International Encyclopœdia of Modern Medical Science by leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D. In twenty volumes. Volume I, Diseases of the Uropoietic System. Royal 8vo, cl., pp. 737. New York: William Wood & Company. 1895.

The nineteenth century is now so near its close that not much is probably required to anticipate the particular advances of the next four and a half years, but there is a possibility that there may yet be valuable discoveries added to the glorious record of the present century. This possibility has been recognized by the editor, who explains why, in the arrangement of subjects, the diseases of the uropoietic system occupy the initial volume. He says: "In arranging the order of subjects it has been thought best to reserve the consideration of infectious diseases for the later volumes in the hope that by the time they are published, a solution of some of the problems in the pathogenesis and therapy of these affections as yet but partially worked out, will have been reached."

The contributors to the present volume are Francis Delafield, M.D., LL.D., of New York, on "Diseases of the Kidneys;" Mr. Reginald Harrison, F.R.C.S., of London, on "Diseases of the Kidneys (Surgical) and of the Ureters," also "Diseases of the Bladder;" G. Frank Lydston, M.D., of Chicago, on "Diseases of the Prostate," and "Diseases of the Male Urethra;" Mr. E. Hurry Fenwick, F.R.C.S., of London, on "Diseases of the Urine," and Howard A. Kelly, M.D., of Baltimore, on the "Diseases of the Female Bladder and Urethra."

The tendency of the time toward operative interference in most diseases is here shown, as with the exception of Professor Delafield, all the writers in this volume are surgeons and write from a surgical standpoint. Mr. Harrison gives full credit to Van Hook and Finger, for their luminous expositions of the surgery of the ureters (published in full in this JOURNAL). In speaking of renal hydatids, he quotes Osler, of Baltimore, as saying that "it is rarely met with and in the inspection of over eight hundred bodies only three instances have been found." Hamilton's case (see this JOURNAL, Oct. 7, 1893) is not mentioned. The article of Dr. Kelly gives a full and very clear exposition of the methods of examination of the female bladder, and catheterization of the ureters. Dr. Lydston writes with his customary circumspection; in speaking of castration in prostatic disease he says:

"The most recent operation for the relief of enlarged prostate seems to be meeting with some success. The author has had no experience with it, but it is worth considering, provided the patient's virility has disappeared; otherwise it is better to construct an artificial supra-pubic urethra, with or without operation on the prostate proper. Castration is an operation not to be lightly undertaken as certain historical medico-legal cases have shown. Should future experience demonstrate that it is frequently successful, the surgeon should still exercise the greatest circumspection in the performance of this operation. A patient who appears perfectly reconciled to the loss of his testes may subsequently look at the matter in a different light; there is a suggestion of grim humor in the new procedure; the oöphorectomy craze of the recent past is still a vivid recollection."

Materia Medica and Therapeutics for Physicians and Students. By JOHN B. BIDDLE, M.D. Thirteenth edition, revised, rearranged and enlarged, with special reference to therapeutics, toxicology, the physiologic action of medicines, and containing all the preparations and remedies described in the U. S. Pharmacopœia of 1890, to which the work has been made to conform. By CLEMENT BIDDLE, M.D., U. S. Navy, with numerous illustrations. Philadelphia: P. Blakiston, Son & Co. Chicago: E. H. Colegrove & Company. 1895. Price $4.

So far as a notice can help or harm a book there is no particular use in a journalistic notice of Biddle's "Materia Medica," a book almost as staple as flour, and a title page as familiar to the profession as a picture of the front of the Capitol. It is sufficient to say that the thirteenth edition of this standard work has been revised to conform to the requirements of the new Pharmacopœia, and all its elements of popularity have been retained. We venture to suggest to the compiler of the fourteenth edition, that he give the dosage in the decimal or metric system in the text of the book as well as in the appendix. The publication of a posologic table in an appendix is valuable, as we can not have too much of a good thing, but the text of the articles itself should show this change of system.

A Practical Theory and Treatment of Pulmonary Tuberculosis. By FRANK S. PARSONS, M.D., editor of the *Times and Register*. Paper, pp. 77. Philadelphia: Medical Publishing Company. 1895.

The author begins his brochure with the query whether pulmonary tuberculosis is curable, and answers it by saying "undoubtedly." He recommends proper individualization of cases and then oxygenation by hydrozone and glycozone, general treatment by climate, hygiene and exercise, diet of carbohydrates, et cetera. The author has brought out his ideas in an attractive form, and his conclusions are logical. We notice also that it is being printed as a serial in the *New England Medical Monthly*.

The Physician's Vade Mecum; being a Handbook of Medical and Surgical Reference, with other useful Information and Tables. By SEBASTIAN J. WIMMER, M.A., M.D. With additions by FRANK S. PARSONS, M.D., editor of the Philadelphia *Times and Register*. Cl., pp. 483. Price $1. Philadelphia: The Medical Publishing Company. 1894.

This is a convenient little book of reference for general practitioners and druggists. The "Physician's Interpreter," in English, French and German, is a new feature in a book of this kind, and a useful one. Some acquaintance with those languages is necessary in order to use the dialogue, as unless pronounced properly, the words will not be understood. There are over one thousand prescriptions in the book, all written in the old British system of weights and measures. A posologic table in another place, however, gives the decimal system of dosage.

SELECTIONS.

Echinococcus of the Right Ovary with Multiple Echinococci of the Peritoneum.—According to W. A. Freund and Schatz, the development of echinococcus in the human ovary have not hitherto been proved. The seven cases collected from literature by Schatz are in his opinion not reliable: two other cases found by the writer speak with probability for echinococcus of the ovary. In one case of his own, which was operated on with good result, the writer attempts to prove that there was an autochthonous development of echinococcus in the ovary. The nature of the tumor was manifest from its smooth inner surface which was profusely covered with broad capsules and scolices, also from the daughter and grand daughter cysts inclosed in the tumor. The proof that the tumor was, in fact, ovarian, is derived from its position and its relation to the parovarium and tube. At no point in the tumor wall was ovarian structure demonstrated, a point which the writer asserts is an argument for his position that the echinococcus exercising like pressure on all sides, was developed in the midst of the ovary.—*Centralblatt für Gynäkologie.*

The Practicability of the Murphy Button for Anastomosis.—Chaput has stated his opinion before the *Société de Chirurgie* on the usefulness of the Murphy button as follows: "On the cadaver the largest sized button in ten cases out of twelve could pass the jejunum only with the greatest difficulty; twice it was altogether impossible. The cause lies in the lumen of the bowel, which, in eight cases, yielded the following figures: 41, 27, 27, 26, 45, 37, 27 and 21 mm., and in four cases, inflated, 100, 70, 73 and 68 mm.; on the other hand, the circumference of the Murphy button shows the following measurements: 66, 78.5 and 84 mm. Accordingly the bowel is absolutely too narrow for the highest two numbers. On the basis of these experiments, Chaput states the following opinion, that the use of the highest two numbers, if it is to pass the jejunum, is directly contrary to common sense and that even the lowest can possibly catch at the end of the ileum.

"In eight experiments on dogs, he had the following results: Four recoveries and four deaths. In two favorable cases the expulsion of the button took place on the eighth day, in two others the buttons remained *in situ* when the animal was killed. The Murphy procedure does not induce stenosis of the bowel. Of the four other dogs, three died of peritonitis with necrosis of the intestine; in the four gastroenterostomies the gut slipped out from the button and the intestinal contents were discharged into the abdominal cavity.

In man, Chaput had the experience once of finding that the ends of the rectum, resected for carcinoma, could not be brought togther with the button; in another case, after resection of the ascending colon, the patient died in forty-eight hours, and at the post-mortem the bowel was found almost perforated, and the lumen of the button obstructed by a hard fecal mass.—*Centralblat für Chirurgie.*

Cystitis in the Female.—The *Wiener Klinische Rundschau* has the following abstract of a paper by Dr. Zuckerkandl: "Granting the fundamental fact that, as a rule, the simple admission of pathologic germs into the bladder is not followed by inflammation, but that in some way an abnormal condition of the bladder wall must be created, the writer distinguishes in the female:

"1. Cystitis from hyperemia of the bladder. Between the fundus of the bladder and the uterus there exists a connection in blood supply. Therefore it happens in the gravid state that various inflammatory processes in the uterus and its adnexa, and other conditions which follow congestion, are accompanied as well by hyperemia of the bladder wall. On this soil a cystitis is easily induced, spontaneously, if germs pass from the urethra into the bladder, as quite frequently happens in catheterization. Cystitis also arises from hyperemia of the bladder in conjunction with the operative separation of the posterior wall of the bladder.

"2. Cystitis from insufficiency: *a*, from malposition of the bladder lateral version, prolapsus descensus vesical, and tumors, which render it impossible that the bladder contracts normally; *b*, from retention post-partum in consequence of the softening of the mucous membrane; *c*, from involution of the bladder. In old women who have borne many children, the bladder is dilated, the mucous membrane becomes atrophied, thin and pale and the sphincter and detrusor become insufficient. (Chevalier, in 1891, portrayed a similar condition as prostatism in the female.)

"3. Traumatic cystitis, for example, necrosis from pressure in childbirth."

The writer further made mention of the transmission of pathogenic germs from neighboring organs, for example, the intestines into the bladder, and the possibility of accompanying hyperemia. The spontaneous migration of germs from the urethra naturally does not act as an opposing factor; on the contrary, in doubtful cases an antiseptic injection should follow catheterization.

In the discussion that followed, Dr. Mackenrodt (Berlin) combatted the idea of a connection between the bladder and the uterus through the larger arteries, and even a capillary connection; in the separation of these organs from one another, neither any considerable hemorrhage, nor a disturbance of circulation takes place. During pregnancy the blood pressure is increased in all the abdominal organs, consequently in the bladder. As an etiologic factor in cystitis he would further mention the sacculation which is observed not merely after laparotomy, but especially in pelvic peritonitis.

In closing, Dr. Zuckerkandl stated he had at the last moment forgotten to mention in his paper these shrivelling processes, as results of pelvic peritonitis. He insisted that a connection in the blood supply between the bladder and the uterus does exist and is formed through venous trunks, three or four of which, on each side, run backward from the posterior wall of the bladder in the loose cellular tissue.

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SOCIETY NEWS.

Kings County (N. Y.) Medical Association.—I desire herewith to notify you officially of the duly elected officers of the Kings County Medical Association, of New York, for the year 1895: President, J. C. Bierwirth; Vice-President, N. W. Leighton; Recording Secretary, F. C. Raynor; Corresponding Secretary, H. C. Riggs: Treasurer, E. H. Squibb. Elected members of the Executive Committee: Jonathan Wright, term expires January, 1896; J. D. Rushmore, term expires January, 1897; R. M. Wyckoff, term expires January, 1898; T. M. Rochester, term expires January, 1899. H. C. Riggs, M.D., Corresponding Secretary.——The first meeting of the Southwestern Medical Association was held in Creston, Iowa, February 26.——A regular meeting of the St. Louis Medical Society was held February 23.——The Luzerne Medical Society held a meeting February 20.——The Northern Berkshire Medical Association held a regular meeting at North Adams, Mass., February 24.——The third annual meeting of the Austin Flint Medical Association of Lawrenceville, Pa., was held February 26.——The quarterly meeting of the Onondaga County Medical Society was held February 26, at Syracuse, N. Y.

MISCELLANY.

Busy Bacteriologists.—A Berlin letter of the 20th ult., says that the scientific men of the day who are making investigations in bacteriology are as feverish as were the prospectors for gold in California half a century ago. They all feel themselves on the eve of great discoveries, especially since Behring hit upon his *heilserum*, the panacea for diphtheritic troubles. The laboratories of Pasteur and others of eminence are already crowded, and the young men who go to Paris hoping to gain admittance into such workshops must have done enough in bacteriology to warrant the expectation that they are to become shining lights in the scientific world.

Mortality by Influenza Influenced by Humidity.—Sergeant Dunn, of New York City, holds the opinion that a marked relation subsists between the prevalence of certain types of weather and the prevalence of grip. His conclusion is that the weather is an important factor in the mortality of grip cases and that the humidity of the air "seems to be the important element in producing or aggravating the disease." He says: "The fatality is most marked when the humidity is at its maximum and there is a sudden fall of temperature. . . . The higher the humidity and the more sudden the fall of temperature the greater the number of deaths, and it is also observed that when the temperature and humidity drop at the same time there is a sudden decrease of the death rate."

The Health Officer of New York.—Dr. Alvah H. Doty, the newly appointed Health Officer of the Port of New York, is probably the youngest man to receive that important command. He was graduated from Bellevue Hospital Medical College in 1878. He was soon thereafter appointed Diagnostician to the Contagious Disease Bureau of the Board of Health; of which he has been Chief Inspector during the past year or two. He has manifested great vigor in the handling of the metropolitan problems in contagious crises. He has acquired a volume of experience that will not fail him in any peril that may approach the great harbor over which he will be sanitary autocrat. Like sundry other sanitarists of his State, he has entered the surgical arm of the National Guard, being Surgeon and Major in the Ninth Infantry Regiment.

Some New Properties of Pilocarpin.—Hartcop calls attention in *Les Nouveaux Remedes* to pilocarpin, which, in his opinion, is unjustly abandoned as a medicament. It renders signal service, especially as a sialgogue. He gives it subcutaneously in doses of 0.01 to 0.02 grammes. It can be used with great benefit first in intracranial hyperemia, uremia, commencing meningitis, chronic meningitis; next in affections of the throat and larynx, especially in edema of the glottis; then in acute renal affections, scarlatinal nephritis and in some affections of the cord and peripheral nerves in the initial stages. Pilocarpin also acts as a revulsive. In some cases it is advisable to associate it with iodid of potash or the biniodid of mercury. The author reports several cases in support of his assertions.

Cleansing the Surgeon's Hands.—There are three principal methods of cleansing the surgeon's hands in vogue in Germany. The one most commonly employed is that of Fürbringer, which consists in brushing the hands and nails with soap and hot water, then dipping them in an 80 per cent. alcohol solution, and finally washing with a 2 per cent. sublimate of mercury, each part of this proceeding to last one minute. Reinecke, of Leipzig, asserts that a sure disinfection of the hands may be obtained by rubbing them with alcohol only and washing afterwards with pure sterilized water; the alcohol dissolves the sebaceous substance on the surface of the skin, thus enabling the bacteria which adhere to it to be easily washed away. Schleich rejects all brushing, and only washes the hands with a soap invented by himself, which consists of domestic soap (one part), marble powder (three parts), and lysol (4 per cent. of the whole); this soap cleans less by chemic than by mechanical means, the fine marble powder penetrating into all the folds of the skin and rubbing away all dirt and detritus.

Alcoholism in Russia and Switzerland.—A new law regulating the sale of alcoholic drinks has been in effect since the first of this year in some parts of Russia. It received the imperial sanction June 6, 1894, and it is believed by the *Gazette Medicale de Liege* that it will undoubtedly diminish the consumption of alcohol. It is now in effect in the provinces of Perm, Oufa, Orenburg and Samara. Committees, comprised of the principal men of the locality who are best acquainted with the habits of the community, are constituted in each village and are to be known as "Guardians of Temperance." Their duties will be to aid the State in reforming the sale of alcoholic drinks, to make the dangers of alcoholic abuse known by local conferences, and to establish temperance cafés where men may find the attractions usually inseparable from alcohol. Switzerland is the best organized country for the contest against alcoholism. On Sept. 30, 1893, the Society of the Blue Cross numbered 241 groups with 11,143 members, 4,118 of whom were reformed drunkards. Its activity is unrivalled, favored as it is by the strict legislation governing the sale of alcoholic drinks in Switzerland. It has founded temperance cafés in Geneva and several other large cities and several have been started by private parties as a speculation.

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An International Language for Medicine.—Dr. Manassein, of St. Petersburg, is in favor of adopting French as the international language for medicine, which prompts Dr. Keser to write to the *British Medical Journal* giving some reasons for this adoption. After disposing of Latin, Greek and German he adds: "We are thus limited to English and French. English is a simple and useful language, probably the best for written communications, but it is much more difficult to understand and to speak than to read and write. As a means of international communication orally, English is decidedly inferior to French, the pronunciation is very difficult and the clear production of its sounds requires considerable effort. French is already the universal language of the diplomatic corps. If I may judge by frequent meetings with foreigners, it is in more universal use than English among physicians in Russia, Germany, Spain, Italy, South America, Greece and Turkey. No language compares with it for clearness and precision. The use of French is widespread in England, where it is positively rare to find an educated physician without some knowledge of it. Most of them make excellent scholars without much difficulty." Keser concludes: 1, it is highly desirable in the interests of science that some agreement should be reached as to the adoption of an international medical language; 2, no language, living or dead, meets the necessary requirements better than the French.

The "Percentage" Slander Repudiated.—A member of the New York Academy of Medicine has recently written a letter to the *Herald* of that city, to show how slanderous is the view held by some, that all druggists pay physicians a percentage on all prescriptions. The letter was elicited by an alleged humorous paragraph, in a former issue of the *Herald*, declaring that "the doctor draws a fat commission from the till of his accomplice, the apothecary." As the writer remarks, no good end is met by the publication of slurs of that kind; what little effect they have is all in the wrong channel. They simply tend to confirm an unjust prejudice unwisely accepted by ignorant laymen. The letter states that in two decades of active practice he never met with one such commission-paying druggist. The following is a part of the letter: "I have practiced medicine for more than twenty years and I am happy to say that no such offer has ever been made to me. A physician's reputation and success depends not only upon the skill with which he prescribes, but quite as much so upon the care and accuracy with which his prescriptions are dispensed; and hence he recommends his patient to a certain drug store, or a choice of certain drug stores, where he is sure the conditions will be fulfilled, and he warns them against other stores of a less respectable and frequented class, where unqualified boys are allowed to handle important drugs, where it would be practically impossible to maintain a full line of drugs in good condition and where if they do not happen to have the article called for they do not hesitate to substitute something else."

Hospital Notes.

A PUBLIC HOSPITAL at Muskegon, Mich., was organized February 26. Charity clinics will be held weekly, and a training school for nurses will be organized in connection with the hospital.——A new hospital for scarlet fever and diphtheria cases will be established in New York, owing to the beneficence of Mrs. John W. Minturn, of that city, who has given $25,000 toward the erection of an institution for that purpose.——The annual report of the German Hospital at Kansas City, Mo., shows that 321 patients have been treated during the year.——The executive board of the Buffalo General Hospital have approved the plans for the new hospital building in that city, cost not to exceed $150,000.——Plans have been prepared for the new St. Joseph's Hospital for the Insane at Asbury, Iowa. The building will accommodate 210 patients and will cost nearly $75,000.

Louisville Notes.

VITAL STATISTICS.—Flemming County, Kentucky, is one of the few counties in the State in which there is a law making it compulsory for a return to be made by the physicians, of all births as well as deaths. During the past year this has not been done, and on March 1, warrants were issued for every doctor in the county for failing to register a list of births and deaths during the year.

LEXINGTON'S SMALLPOX.—Just when the public mind became at rest over the subject of smallpox in Lexington, there was developed a municipal scandal in regard to the purchase of the pest-house by the city.

AMBULANCE.—The importance of a city ambulance is shown by the report of its excellent service for the past month. The ambulance is kept at the City Hospital and is free for the transportation of the sick or wounded to their homes, the infirmaries, or the City Hospital.

MORTALITY REPORT.—The fatality of pneumonia during February is unprecedented in this city. It is impossible to gather any statistics as to the death rate of the total number of cases, but this can be conjectured from the fact that only three recovered out of fifteen cases at the City Hospi-

tal. Later reports may make the rate more heavy. During February there were 330 deaths, 90 of which were caused by pneumonia, and 43 by consumption. Bronchitis is credited with ten deaths; typhoid fever twelve; organic disease of the heart nineteen; cerebral meningitis thirteen; still born eighteen; old age fifteen. During the week there were ninety-eight deaths, and of these twenty-six were due to pneumonia, and sixteen to consumption.

St. Louis Notes.

The St. Louis Medical Society.—At the meeting on March 2, Dr. William Johnston introduced a resolution which had been signed by Drs. Loftus, Pollock, McCullers, Barck, Summa and Ohmann-Dumesnil, favoring the passage of the bill now before the Missouri Legislature, which provides for a more rigorous examination of applicants for physicians' diplomas and certificates. No action was taken upon the resolution. Dr. A. H. Meisenbach reported a case of removal of the tibia. Dr. I. N. Love read a paper on the status of diphtheria, pathologically and therapeutically considered.

Contagious Disease Report.—Following is Chief Sanitary Officer Francis' report for the week ending March 2: Smallpox, cases 14, deaths 13; diphtheria, cases 23, deaths 6; croup, cases 8, death 6; scarlatina, cases 7, no deaths; typhoid fever, cases 3, deaths 1; whooping cough, cases 4, deaths 1.

Weekly Mortuary Report.—The mortuary report of the Health Department for the past week shows the following: Total deaths, 212; for the previous week, 194; for the week ending March 3, 1894, 162; death rate, 20 per 1,000.

Smallpox.—During the past three weeks the city has been in more or less danger of an epidemic of smallpox. For a week there has been no marked increase in the number of cases, and with precautions taken to prevent the spread of the disease there now seems little probability that the pest will be widespread. Vaccination has been placed within the reach of all and enforced when possible. Numerous additions have been made to the staff of city physicians for this purpose. This outbreak seems to have originated at the race track in East St. Louis; the majority of cases have been among the colored population. According to reports, smallpox has been carried from the same place to Hot Springs, Ark., where 100 cases have already occurred. The result so far as the business at the Spa is concerned has been disastrous. There has been a wild rush among the visitors to leave, and the "scare" has become so widespread along the Iron Mountain Railway that arriving passengers at all stations are regarded with suspicion.

The Medical Building.—A project is on foot to erect a ten story office building on Seventh Street between Olive and Pine Streets, to be known as "The Medical." The intention is to have the building given over to doctors for offices, and the rooms and conveniences are to be arranged with that object in view.

The Barnes Medical College is about to erect a new building, and convert the old college building into a hospital.

The State Legislature has before it a bill to restrict the use of hypnotism. This bill is doubtless an outgrowth of the celebrated Kansas murder case in which the principal escaped conviction and the accessory was condemned. Strange to say, hypnotism played no part in this remarkable case, and the popular alarm excited was entirely due to the sensational accounts sent to the press by an enterprising reporter.

Hospitals, etc.—During the past year an unusually large number of deaths have occurred at the State Asylum at Little Rock, Ark., and this increase of the death rate has been attributed to bad diet and improper sanitary conditions. The matter is now under investigation by a legislative committee.

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Philadelphia Notes.

Dr. Carl Seiler has resigned his position as Clinical Professor of Laryngology at the University of Pennsylvania, owing to impaired health.

Jefferson Medical College.—Dr. William Thomson has been elected Professor of Ophthalmology, thus giving him a full chair in the Faculty. Dr. Howard F. Hansell has been appointed Clinical Professor of Ophthalmology. Prof. James C. Wilson has taken charge of the Hospital, to succeed Dr. E. E. Montgomery under whose administration the institution, during the last two years, had greatly prospered. In consequence of the differences of opinion three members, including the President of the Board of Trustees of this institution have resigned; their places have been filled. It is understood that in consequence of this change, the project of removal of the buildings to a location on South Broad Street has been postponed indefinitely. As reorganized and complete the Board of Trustees now consists of the following gentlemen: President, Joseph B. Townsend; Secretary, Simon Gratz; Treasurer, Edward H. Well; Hon. Joseph Allison, Hon. Michael Arnold, Henry D. Welsh, Sutherland M. Prevost, Thomas B. Wanamaker, Col. Edward Morrell, Luther S. Bent, Hon. Wm. Potter, Jr., and the newly elected members, L. C. Vanuxem, Samuel Gustine Thompson, William Henry Newbold and Louis A. Biddle.

The Medico-Chirurgical College is about to sever its relations with the Philadelphia Dental College and will probably start a dental department of its own.

The Norristown Insane Asylum has just been investigated by a legislative committee, charges having been made of cruelty, mismanagement, etc. The committee after several sessions adjourned February 23, until next month, practically admitting that there is not the least basis for a suspicion of mismanagement. Criticism of the system of keeping the accounts has been made, however, by individual members of the committee. Dr. Alice Bennett pointed out the fact that the transfer of the able-bodied dements and chronic cases to the Wernersville State Asylum will tend to increase the expense of running other hospitals. This may be measurably true, but the principal object in establishing the hospital for the chronic insane at Wernersville was to give employment to many dements who were kept in idleness in the other State hospitals, and who since their transfer have been engaged in assisting in building the new hospital. The same committee has investigated charges of cruel treatment of patients at Wernersville and has found no foundation for the statements.

Early Diagnosis of Diphtheria.—In consideration of the importance of early and correct diagnosis in suspected cases of diphtheria, special facilities are offered by which bacteriologic investigations can be had without expense. Thus the Laboratory of Bacteriology of the Philadelphia Polyclinic, undertakes free of charge, the examination of the exudation in suspected cases of diphtheria, and to report to physicians the bacteriologic diagnosis. Sterilized swabs and blood serum tubes, together with instructions for the method of procedure, can be obtained at the laboratory with instructions for their use.

Curiosities of Coroner's Office.—Among the curiosities of the coroner's office, is noticed the case of death of an 8 months old baby by getting a marsh-mallow in her throat. She was promptly taken to the Woman's Homeopathic Hospital, but it was not found possible to prevent a fatal result.

A demented woman, 31 years of age, drank a solution of blue heads of matches, and died in consequence in forty-eight hours. This is the second death lately from this cause, a woman having dropped a box of matches into a cup of tea and then drank the tea, with phosphorous poisoning as the result. There have also been several suicides from swallowing carbolic acid, and others have occurred from shooting or hanging, as a result of the depression following an attack of the grippe.

THE INFLUENZA has prevailed to a very moderate degree this winter; but singularly enough has attacked the members of the medical profession to such an extent as to fully warrant the opinion of its contagious character.

TO REMOVE THE MUNICIPAL HOSPITAL.—An attempt to remove the Municipal Hospital from its present location near Lehigh Avenue and Broad Streets has failed, a sub-committee of Councils having presented an adverse report. A similar result attended the attempt to have the Philadelphia (Blockley) Hospital removed some weeks ago.

DR. HOWARD J. TAYLOR, Medical Inspector of the City Board of Health in his Annual Report for 1894, stated that there had been 3,159 cases of diphtheria, an increase of 10 cases and 131 deaths over the previous year; 1,922 cases of scarlet fever, a decrease of 927 cases and 114 deaths; and 126 cases of smallpox, an increase of 83 cases. Of these, there there were treated in the Municipal Hospital 465 cases of diphtheria; 139 of scarlatina; and 83 of smallpox. From March 7, 1894, to Dec. 31, 1894, 1,945 deaths from consumption were reported to this department, and in all of these cases, except where the death occurred in a hospital, the houses were visited by the assistant medical inspectors, and in most cases fumigation or disinfection was done.

While there was only an increase of ten in the diphtheria cases, the increase in deaths was in much greater proportion, indicating the more malignant character of the disease, notwithstanding a more efficient system of disinfection has been in operation during a portion of the year. In addition to the sulphur fumigation in every case, there has been used a solution of bichlorid of mercury in the form of a spray, whereby every portion of the room and furnishings have been thoroughly treated.

Quarantines were maintained in all cases where a doubtful compliance with necessary regulations seemed probable.

A marked increase in smallpox cases developed late in the year, and it is to be apprehended that the disease will continue without abatement during the winter months. Thus far it has prevailed with but few exceptions in two opposite sections of the city, the northeast and northwest. With the extensive vaccination now being done, it is to be hoped that this scourge may be confined within its present limits.

BACTERIOLOGIC LABORATORY.—Councils have approved the recommendation of the City Board of Health to establish a bacteriological laboratory, and a competitive examination has just been held for the position of Director of the Laboratory.

THE HEALTH OF THE CITY.—There have been a few cases of smallpox in the city this winter, not more than seventy or eighty at a time, and of these two-thirds have been treated in the Municipal Hospital and one-third quarantined in their own homes which are placarded by order of the Board of Health. On February 25, an interesting case was decided by the city solicitor. A young man suffering with smallpox was reported to the authorities who decided that he should be removed to the hospital; to this his parents strenuously objected, insisting that he should be cared for at his own home. Inasmuch as the health authorities had decided that it was not safe to treat him in his own house, which was in a populous neighborhood, they appealed to the city solicitor, who decided that according to the act of 1878, the city had the power to remove such a person "when he could not properly be treated in his own home," and that the act contemplated the safety of the general community rather than the convenience of the individual by the phrase "proper treatment." With the aid of the city police, the patient was removed from his home, placed in the ambulance and taken to the hospital. The parents are highly incensed and are threatening a suit against the city for damages, for removing the patient and disinfecting the premises.

Within the first five weeks of the year there were reported more cases of smallpox and as many deaths as occurred during the whole of 1894. There were reported 135 cases and 13 deaths; but Dr. Ford, President of the Board of Health states that there is not the least danger of an epidemic to be apprehended. In the meantime every one has been getting vaccinated and it has been made obligatory upon the school children by order of the Board of Education.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from Feb. 23, 1895, to March 1, 1895.

First Lieut. FRANK T. MERIWETHER, Asst. Surgeon U. S. A., is granted leave of absence for six months, on account of sickness.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending March 2, 1895.

Medical Director A. A. HOEHLING, detached from Naval Hospital, Chelsea, Mass., and granted three months' sick leave.

Asst. Surgeon AMMEN FARENHOLT, detached from the Norfolk Navy Yard, and ordered to the U. S. S. "Baltimore."

Asst. Surgeon C. P. KINDLEBERGER, detached from the U. S. R. S. "Vermont," and to the Norfolk Navy Yard.

Asst. Surgeon ARTHUR W. DUNBAR, detached from the Naval Laboratory and Department of Instruction, and to the U. S. R. S. "Vermont."

Medical Inspector J. B. PARKER, detached from duty in connection with the investigation of the Ford Theater disaster, and to the Hospital and Yard, Portsmouth, N. H.

Medical Inspector D. MCMURTRIE, in addition to present duties, to duty in connection with the investigation of the Ford Theater disaster.

Marine-Hospital Changes. Official list of changes of stations and duties of medical officers of the U. S. Marine-Hospital Service, for the thirteen days ended Feb. 28, 1895.

Surgeon H. R. CARTER, to assume temporary command of Cape Charles Quarantine, during absence of P. A. Surgeon T. B. PERRY, Feb. 27, 1895.

P. A. Surgeon P. C. KALLOCH, directed to rejoin station, Cincinnati, Ohio, Feb. 21, 1895.

P. A. Surgeon T. B. PERRY, to proceed to Brunswick, Ga., Quarantine, for temporary duty, Feb. 27, 1895.

P. A. Surgeon E. R. HOUGHTON, , granted leave of absence for two days, Feb. 18, 1895. Leave of absence extended five days, Feb. 22, 1895.

Asst. Surgeon RUPERT BLUE, to proceed to San Francisco, Cal., for duty, Feb. 23, 1895.

LETTERS RECEIVED.

Anderson, Winslow, San Francisco, Cal.; Allen, R. G., Peoria.

Brumder, Geo., Milwaukee, Wis.; Barker, E. O., Guthrie, Okla.; Billings, Clapp & Co., Boston, Mass.; Bovinine, The Co., New York, N. Y.; Bulson, A. E., Fort Wayne, Ind.; Baker, H. B., Lansing, Mich.

Canton Surgical & Dental Chair Co., Canton, Ohio; Clarke, A. P., Boston, Mass.; Cain, J. S., Sewanee, Tenn.; Clarke, Robt. & Co., Cincinnati, Ohio.

Damrell & Upham, Boston, Mass.; Doliber, Goodale Co., Boston, Mass.; De Pode, A. C., Paris, France; Davidson Rubber Co., Boston, Mass.

Eads, S. O., Beaver Crossing, Neb.

Fairman, E. W., Brodhead, Wis.; Fairchild, Bros. & Foster, New York, N. Y.; Follansbee, Geo. Edw., Cleveland, Ohio.

Gerhard, M. U., Markleton, Pa.; Gage, Homer, Worcester, Mass.; Gilpin, Langdon & Co., Baltimore, Md.; Greenbaum, S. P., Louisville, Ky.; Gray, Geo. D., Haynes, Ark.

Haller, F. B., Vandalia, Ill.; Hummel, A. L., Philadelphia, Pa.; Hyman & Schambs, Cleveland, Ohio.

Ill, E. J., Newark, N. J.

Jenkins, J. F., Tecumseh, Mich.

Kempker, J. F., West Burlington, Iowa.

Login, B., New York, N. Y.; Lea Brothers & Co., Philadelphia, Pa; Lawrence, J. C. & Co., New York, N. Y.

McLain, A. M., Irwin, Pa.; Merrill, The Wm. S., Chemical Co., Cincinnati, Ohio; Mariani & Co., New York, N. Y.; Matthews, J. P., Carlinsville, Ill.; McCambridge, P. H., Stewardson, Ill.; McCulley, D. M., Independence, Kan.; MacAlister, J. G. W., London, Eng.

New York Phamaceutical Co., Bedford Springs, Mass.

Owsley, Wm. T., Washington, D. C.

Pleek, S. M., St. Louis, Mo.; Publisher's Collection Agency, St. Paul, Minn.; Paul Kegan, French, Trübner & Co. Ltd., (2) London, Eng.

Reese, D. J., Renona, Pa.

Sawyer, C. P., Wareham, Mass.; Shearer, G. H., Philadelphia, Pa.; Schering & Glatz, New York, N. Y.; Scheiffelin, W. H., & Co., New York, N. Y.; Sanderson, A. J., Ann Arbor, Mich.; Sharp & Dohme, New York, N. Y.

Taylor, J. H., Knoxville, Tenn.; Trowbridge, J. B., Hayward, Wis.

Weinhagen, H., New York, N. Y.; Warner, W. R. & Co., Philadelphia, Pa.; Weston, Frank R., Onalaska, Wis.

PAMPHLETS RECEIVED

Brown, Chas. H., M.D. The Chemic Relation of Ozone and Hydrogen Peroxid. Reprinted from the *Medical News*, 1891.

Wiggins, F. Holme, M.D. Intestinal Anastomosis. Reprinted from New York *Medical Journal*, 1894.

Connor, Leartus, M.D. Astigmatism as a Factor in Causation of Myopia.

Martin, Avelino, M.D. Ozena Verdadero. (Rinitis Atrofica Fétida.) Barcelona, 1894.

Foster, Burnside, M.D. Notes on a few Clinical Experiences of Inherited Syphilis. Reprint from *Northwestern Lancet*, 1894.

Bibb, R. H. L. The Nature and Treatment of Leprosy.

Manley, T. H. The Pathology, Symptomatology and Treatment of Hemorrhoids, Simple and Complicated. Reprint from St. Louis *Medical Review*.

Ziegler, S. Lewis. The Treatment of Corneal Ulcer. Reprint from New York *Medical Journal*.